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Instructional Quality and Middle School Student Engagement, Achievement, Attendance, and Gender

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Walden University
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Abstract

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by

Pauline Monsegue-Bailey

MS, University of Phoenix, 2005

BA, Mount St Mary, 1997

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Educational Psychology

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Abstract

Gaps in middle school students' outcomes such as engagement, achievement, and attendance have been linked to instruction. In addition, the effect of instructional quality might not be the same for male and female students. The purpose of this quantitative study was to measure the relationship between instructional quality, student engagement, achievement, and attendance, with gender as a moderator in middle school. The ecological systems model and Vygotsky's social development theory formed the theoretical framework for this study, as they help understand how the environment, including instructional support, is likely to correlate with student behavior and motivation toward learning. The CLASS Observation Tool and Tripod survey were used to measure instructional quality and engagement for students (N = 160) in 11 middle school math classes from a large southern state. Achievement and attendance data were gathered from teachers and administrators. Two-way MANOVA was used for the independent grouping variable for the classroom score. Two-way ANOVA was conducted to examine 2 main effects of the independent variables of CLASS and Tripod. Multiple regression was used for gender as the moderating variable. Gender did not moderate the association between instructional quality and the 3 outcome variables. Additional research is needed to improve the understanding of instructional quality and the connection between the 3 outcome variables. Implications for positive social change include informing public policy of study results to improve instruction, engagement, achievement and attendance.

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Dedication

I dedicate my dissertation to my parents Enid and Eversley Monsegue. I wish they could have seen what I have been able to achieve. They would have been proud of my accomplishments. Thanks to all parents and family members who have supported their children through the Ph.D. process and have instilled in them the drive and determination to never give up.

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Chapter 1: Introduction to the Study

Introduction

Middle school, for some students, can be challenging. Increased gaps in negative outcomes of student engagement, achievement, and attendance are present among male and female students (Archambault, Janosz, Morizot, & Pagani, 2009; Desy, Peterson, & Brockman, 2011; Rimm-Kaufman, Baroody, Larsen, Curby, & Abry, 2015; Robinson & Lubienski, 2011). Engaged students are more likely to be present in school, and scholars have consistently demonstrated the relationship between attendance and engagement (Balfanz, 2007; Fredricks et al., 2011; Marks, 2000). Students who attend school regularly tend to have better grades than students who show increased absenteeism (Balfanz & Byrnes, 2012; Marks, 2009; Skinner et al., 2008).

Students' disengagement in learning is an issue that has gained national attention as education leaders and policy makers have worked toward increasing students' academic success (Downer, Rimm-Kaufman, & Pianta, 2007; Willms, Friesen, & Milton, 2009). Previous scholars have demonstrated that students' lack of engagement in classrooms is prevalent for both male and female students (Fredricks et al., 2011; Marks, 2009). Educational researchers have consistently found that student engagement declines greatly in middle school classrooms (Marks, 2000; Skinner et al., 2008). Some students in middle school described their school experience as unproductive and nonengaging (Allen et al., 2013). Upon entering high school, many students frequently disengage from school. Large class sizes, poor student-teacher relationships, and uninspiring

lessons are factors that contribute to low engagement (Yonezawa, Jones, & Joselowsky, 2009). Due to the growing problem of students' lack of engagement in school, there has been an increased interest in understanding and gathering data on instructional quality, including the additional variables of student engagement, attendance, and achievement (Fredricks et al., 2011).

From a sociocultural perspective, student outcomes, such as engagement, attendance, and achievement, are difficult to understand without also examining the effect of instructional quality. Pedagogy can play an important role in student learning, and improving the quality of teaching is critical to student success (Bill and Melinda Gates Foundation, 2012a). Effective instruction and rich learning environments have been shown directly to influence student engagement and achievement (Allen et al., 2011; Chait 2009; Glazerman et al., 2010; Marks, 2000; Miller & Chait, 2008) and to indirectly affect attendance (Archambault et al., 2009).

Researchers have examined instructional quality in the past using student outcomes, but not in relation to the three outcomes variables as a whole. The field still lacks empirical research that can explain variations between the independent variable of instructional quality and dependent variables of student engagement, achievement, and attendance.

Literature utilizing all of the variables in this study and gender as a moderating variable is scarce. Researchers have examined a combination of variables such as instructional quality and engagement, instructional quality and attendance, or

instructional quality and achievement; however, they never included all of the variables in this study and gender as a moderating variable (Balfanz & Byrnes, 2012; Dotter & Lowe, 2011; Pianta et al., 2010). Examining the relationship between instructional quality and the dependent variables contributed to the existing knowledge by providing evidence to understand instructional quality in middle schools. One cannot generalize research on instructional quality and student outcomes conducted at the elementary level to meet the needs of middle students. At the elementary level, the structure of the classroom and content delivery is very different from middle school; therefore, similar research conducted with elementary teachers and students is not generalizable.

Disengagement begins in elementary school and is greatest in 4th and 5th grade because of low teacher interaction and low instructional quality (Allen et al., 2011; Fredricks et al., 2011). Additionally, because disengagement is an ongoing problem, the field needs continued research. Middle school is when children are particularly at risk for losing interest in school (Balfanz & Byrnes, 2012). Conducting this study at the middle school level provides information that would add to the literature on the effects of instructional quality on student outcomes. Early intervention could correct the growing problems of student engagement, low achievement, and attendance before it is too late. In middle school, factors such as the way teachers instruct students through lectures and the challenge of fostering student interest in content can affect the relationship between instructional quality and the dependent variables.

Archambault et al. (2009) discovered a growing gap in attendance between male and female students, beginning as early as age 12. Boys engage less with school than girls do (Kovalik, 2008). Additionally, researchers have found the gender gap in achievement and attendance for males and females is increasing compared to what previous researchers reported (Balfanz et al., 2007; Marks, 2000; McCarty, 2009). Boys underperform academically compared to girls, with a larger gap emerging when compared to low-performing students (Balfanz & Byrnes, 2012; Legewie & DiPrete, 2012; McCarty, 2009).

Male and female students appear to learn differently from lecture and visual aids (Kovalik, 2008; Neu & Weinfeld, 2007). Because male and female students are likely to respond differently to instruction and have differences outcomes, it is critical to examine the role of student gender in the relationship between instructional quality and student outcomes (Archambault et al., 2009; Dotterer & Lowe, 2011; Fredricks et al., 2011; Goe & Stickler, 2008). In the present study, gender serves as a moderator between the independent variable and dependent variables.

This study examined the associations between instructional quality, student engagement, achievement, and attendance, as well as the extent to which student gender moderates these associations. One factor that makes this study unique is examining gender as a moderating variable, while also examining the relationships between instructional quality and student engagement, achievement, and attendance. Another unique aspect of this study is the utilization of two distinct measures, direct and indirect,

for data collection. Utilizing two distinct measures is important because data are collected on instruction through an observer's lens and the student survey. Results from the study showed a need for the creation of instructional observation tools for middle schools to determine the associations among instructional quality, student engagement, achievement, and attendance among males and females. The sections in this chapter include a detailed discussion of the importance of investigating instructional quality and its effect on student engagement, achievement, and attendance. Next, this chapter includes the research questions and hypotheses, theoretical framework of the study, nature of the study, and study's limitations.

Background of the Study

For the variables of interest in the present study, there is limited research focusing on the middle school level. Since instructional approaches change significantly from elementary to middle school, there is a need for intervention at this level to support at risk students through improving student engagement for positive student outcomes (Balfanz & Byrnes, 2012; Pianta et al., 2010). Instructional quality can improve student outcomes, including interest in subjects such as science and math, as well as increase interest in school itself. These factors affect student success (Archambault et al., 2009; Center on Education Policy, 2010; Dotter & Lowe, 2011; Elmore & Huembner, 2010; Gottfried, 2009). Understanding the relationship between instructional quality and student outcomes is important for student success. Effective instruction and rich learning environments are likely to support student engagement, achievement, and attendance.

Boys and girls differ in engagement, achievement, and attendance, so the role of quality instruction becomes more important in addressing a potentially increasing gender gap in learning (Archambault et al., 2009; Balfanz et al., 2007; Marks, 2000; McCarty, 2009). This study examined the relationship between middle school students in high- or low-quality instructional classrooms and their engagement, achievement, and attendance. Student gender as a moderating variable was also examined.

Improving instructional quality and student engagement in the classroom hinges on understanding the nature of effective teaching for middle school students (Allen et al., 2013). Chait (2009) uncovered a significant amount of research that outlines the importance of teachers and the impact teachers have on student achievement. In high-quality classrooms, teachers tend to be more responsive to students and positive engagement occurs, which increases student success (Downer et al., 2007). Few researchers have examined how instructional quality relates to the three student outcome variables as a whole, and no research could be uncovered that showed how gender affects the known relationship between instructional quality and student outcome variables, that is, whether student gender moderates the relationship between quality instruction (independent) and student outcomes (dependent variables).

Analyzing student gender as a moderating variable in the present study provided a new perspective regarding ways to improve instruction, engagement, achievement, and attendance. The literature on this topic includes variables of instruction, engagement, and

achievement, but does not include analyses of the additional variables of gender and attendance.

Attendance is an important factor in improving student outcomes; early detection and intervention of low cognitive and overall student engagement lessens problems around attendance (Archambault et al., 2009). Chait (2009) investigated the teacher's role and determined the need for teacher support and observational data to ensure teacher effectiveness; however, Chait did not explore student engagement and attendance. Other scholars have noted that student success was an important factor, but Chait hypothesized that specific instructional characteristics tend to have a greater influence on student engagement, student achievement, and attendance with female students. Multiple scholars have noted the growing problem of middle school students' negative interest in school, disengagement in school, low achievement, and possibly strong connection to school attendance (Balfanz, Herzog, & Iver, 2007; Eccles, Midgley, & Alder, 1984; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991).

Problem Statement

Building students' knowledge is a defining factor in learning, and instructional quality is arguably the most important benefit of schools. Acknowledging this benefit has not led to a clear understanding of the appropriate instructional qualities needed to ensure student success (Hanushek & Rivkin, 2012). Instructional quality and student engagement are critical predictors of academic success (Dotter & Lowe, 2011), but middle schools in the United States still struggle with instructional quality and student

engagement. The progression of disengagement begins in elementary school and later leads to low achievement and attendance when schools do not effectively implement and ensure instructional quality and student engagement (Allen et al., 2011; Balfanz et al., 2007). Research at the elementary school level is not always generalizable or applicable to middle school because instructional practices differ in style and content, which affects engagement (Dotter & Lowe, 2011; Hanushek & Rivkin, 2012). Middle school would be the opportune time for intervention because research has shown that, as students enter high school, the problem of lack of engagement tends to increase over time and dropping out of school becomes a larger factor (Archambault et al., 2009). However, the problem starts at the beginning, not the end, of middle school.

The instructional format at the middle school level differs from that at the elementary level; however, intervening when the instructional format changes can help schools address the problem early to enhance instruction and, subsequently, engagement, achievement, and attendance. Early intervention in middle school and meaningful long-term change in student engagement and academic success are critical to address before students lose interest in school (Elmore & Huembner, 2010). Schools can implement change before students lose all interest, which makes early intervention an important factor in sustaining meaningful long-term increases in student interest and their potential academic future. The U.S. Department of Education reported that student disengagement is prevalent among middle school students and is the most common reason for dropping out (Elmore & Huembner, 2010). Notably, school engagement among male students in

middle school has been declining (Lippman & Rivers, 2008). Determining the role of instruction in attendance problems could help educators determine ways to lessen this decline (Elmore & Huembner, 2010). Increasing awareness of the instructional characteristics that are linked to student engagement, achievement, and attendance among male and female students can help direct efforts to improve student achievement.

This study addresses several gaps in the literature. First, previous scholars focused more on pre-K through fifth grade than on middle school regarding instructional quality and the effect on student engagement, achievement, and attendance between male and female students (Dotterer & Lowe, 2011; Pianta, LaParo, & Hamre, 2008; Pianta, La Paro, Payne, Cox, & Bradley, 2002). Instructional format and content in elementary and middle school are different. For example, instructional approaches at the elementary level include teachers using the textbook for students to reference and read; conversely, at the middle school level, the instructional approach is primarily lecture-based (Marks, 2000). Therefore, research conducted using elementary school populations might not be generalizable to a middle school population. Research on instructional practices at the elementary level are not always generalizable or applicable to middle school because of variations in content and delivery. Research findings indicate that positive student-teacher relations and positive student outcomes are stronger in elementary school (Alexander, Entwisle, & Horset, 1997).

Second, scholars who carried out similar studies used an experimental methodology within a scripted instructional environment (Archambault et al., 2009;

Lippman & Rivers, 2008; Marks, 2000). This study differs from others (e.g. Archambault et al., 2009; Lippman & Rivers, 2008; Marks, 2000) because I examined real-world situations without experimental manipulation. The correlation design of this study facilitated investigation of the independent variables and dependent variables without manipulation or control by the researcher (Tabachnick & Fidell, 1996). Additionally, the aim of this study was to provide additional strength in data collection by using two disparate methods for gathering information about instructional quality and one for student engagement. Obtaining student perspectives of instructional quality is a new and effective approach to determine the effect of instruction on student outcomes (Ferguson, 2012; Weisberg et al., 2009). The CLASS observation instrument measures classroom practices as a whole, and Tripod Survey measures data for all students regardless of gender, which is a benefit to the study. This study also extends the existing literature and provides more in-depth information about the variables related to the larger constructs identified in the literature.

The relationship between instructional quality and student engagement is particularly important to understanding male students, because their lack of engagement is relatively high. In 1999, only about 25% of boys between the ages of 14 and 15 were engaging behaviorally, emotionally, and cognitively in school as compared with 50% of girls. By 2002, the gender gap was smaller, but still posed a problem because only 39% of girls and 20% of boys were reportedly engaged in school (Lippman & Rivers, 2008).

Boys and girls differ in how they stay engaged; because engagement is critical to learning, there is a need for continued research in this area to understand students' perspectives. Therefore, investigating gender as a moderating variable in the classroom is necessary because such data may provide guidance on the relationship of instructional quality on student engagement, achievement, and subsequent attendance. The correlation design of this study included instructional quality as the independent variable and student engagement, student achievement, and attendance among male and female students in middle school as the dependent variables. Understanding, whether teachers' instructional practices influence student engagement and attendance can help to lessen the gap in achievement between male and female students. The expectation in this study was that gender would moderate some of the relationships in the study because male and female students interact differently with teachers and respond differently to school in general.

Purpose of the Study

The purpose of this study was to examine the relationship between instructional quality and student outcomes, as measured by engagement, achievement, and attendance and the extent to which gender moderates this association. The study also examined how gender moderates the relationship in middle school. The independent variable in this study was instructional quality; the dependent variables were student engagement, achievement, and attendance and the moderating variable is gender. These variables have been studied individually to determine their individual impacts on student achievement (Allen et al., 2013; Archambault et al., 2009; Bill & Melinda Gates Foundation, 2012a;

Dotterer & Lowe, 2011; Downer et al., 2007; Grossman et al., 2010; Hanushek & Rivkin, 2012). However, researchers have not examined these variables as a group to determine whether gender moderates the variables of instructional quality in predicting student outcome variables. Because student achievement is a complex topic, student outcomes are a critical piece in understanding the literature and the relationship between instructional quality and student achievement. There are several gaps in the literature on this association. For example, most of the literature focused more on pre-K through fifth grade and did not include gender as a moderating variable (Dotterer & Lowe, 2011; Pianta et al., 2002; Pianta et al., 2008). Other studies used an experimental method in an artificially controlled environment (Archambault et al., 2009; Lippman & Rivers, 2008; Marks, 2000). In a natural school setting, this study used two distinct methods to gather information about instructional quality. Additionally, the predictor variable of instructional quality was used to examine gender as the moderating variable in determining levels of variation on student engagement, achievement and attendance, and the relationship it has on instructional quality.

This study makes a unique contribution to the research literature because little is known about which characteristics of instructional quality are most likely to be moderated by gender when predicting subsequent student engagement, attendance, and academic achievement in middle school. Another unique contribution of this study is gathering student perspectives to understand how teachers are meeting standards of instructional quality. Improving academic success has been a goal of state and federal

funding programs for over 15 years (Kaga, Kauerz, & Tarrant, 2008). The emphasis of educational reform on student success has contributed to scholarly discussions among school administrators about teacher quality (Rothstein, 2010) and has increased the concern about instructional quality. While researchers have identified some characteristics of ineffective instruction that contribute to student learning (Goe & Stickler, 2008), this study provides an in-depth understanding of the specific subdomains that contribute to teacher quality and explain how teacher quality affects student engagement and subsequently achievement and attendance. Gender—as the moderating variable of engagement, achievement, and attendance—was also investigated. Such an understanding can inform school administrators who are making decisions about engagement, achievement, and attendance.

Research Questions and Hypotheses

One research question for this study relates to the variables of interest: Is there a relationship between instructional quality and each of the three outcome variables, student engagement, achievement, and attendance?

$H_0$1: There is no relationship between instructional quality and student engagement.

H_a1: There is a relationship between instructional quality and student engagement.

$H_0$2: There is no relationship between instructional quality and achievement.

H_a2: There is a relationship between instructional quality and achievement.

$H_0$3: There is no relationship between instructional quality and attendance.

H_a3: There is a relationship between instructional quality and attendance.

An additional research question of interest is the following: Does gender moderate the association between instructional quality and each of the three outcome variables, student engagement, achievement and attendance?

$H_0 4$: Gender does not moderate the association between instructional quality and student engagement.

$H_a 4$: Gender does moderate the association between instructional quality and student engagement.

$H_0 5$: Gender does not moderate the association between instructional quality and achievement.

$H_a 5$: Gender does moderate the association between instructional quality and achievement.

$H_0 6$: Gender does not moderate the association between instructional quality and attendance.

$H_a 6$: Gender does moderate the association between instructional quality and attendance.

Theoretical Foundation

The theoretical frameworks that support this study are the ecological systems model (ESM) and social development theory (SDT). These theories can help in understanding how the environment, including instructional support, is likely to correlate with student behavior and motivation toward learning. ESM posits that existing

interrelationships between various elements within an ecosystem (Bronfenbrenner & Morris, 1998). The model consists of five major models, but this study used two models: (a) the *microsystem*, which is linked to institutions and groups that affect school and peers and (b) the *mesosystem*, which is linked to relationships between school experiences. ESM relates to the variables in this study because ESM's framework defines the context, interactions, and relationships between groups (Bronfenbrenner & Morris, 1998). By examining instructional quality and the relationship between the independent variable and dependent variables, this study provides an in-depth explanation of effective instruction as it relates to student outcomes. ESM leads to the study results I am attempting to test in explaining the relationship between instructional quality and student outcomes as measured by engagement, achievement, and attendance.

Bronfenbrenner's ecological systems model supports gender as a moderating variable because the self-motivating system within ESM indicates that individuals must adjust to internal drives. ESM can inform efforts to understand the variability of gender when considering instructional quality, student engagement, achievement, and attendance; gender may be one of those variables where there are individual differences in learning, and this study examined such differences.

Exploring the systems within a middle school setting would support the understanding of what instructional qualities entice students to stay engaged and find meaning in learning. Student disengagement can affect achievement and subsequent attendance (Downer et al., 2007; Willms et al., 2009). According to Bronfenbrenner

(1989), when interrelationships of education are taken into account, one can gain a better understanding of how instructional support is likely to correlate with student behavior and motivation toward learning.

The second theory that supports this study is Vygotsky's (1978) social development theory. Vygotsky's theory, based on the transfer of knowledge, provides one approach that links SDT to education. SDT supports the understanding of how the environment, including instructional support, is likely to correlate with student behavior and motivation toward learning. The learning process of Vygotsky's social development describes how one obtains and processes information during learning and how cognitive, emotional, and environmental influences play a factor in the learning process (DeJong, 2010). In education, Vygotsky's theory (1978) has been essential in understanding the critical need for enhancing classroom instruction and student educational development (Vygotsky, Hanfmann, & Vakar, 1962). Vygotsky's work indicates that the connection between people and social factors of shared experiences can increase learning.

Zone of proximal development (ZPD) refers to learning during a critical time (Vygotsky's, (1978). The ZPD is the distance between the student's actual developmental level, as evidenced by independent problem solving, and the level of potential development under adult guidance, or by collaborating with knowledgeable peers (Vygotsky, 1978). Disengagement begins in elementary school, increases by fourth and fifth grade, and continues to be a problem. In middle school, there are concerns of low teacher interaction and low instructional quality (Allen et al., 2011; Fredricks et al.,

2011; Vygotsky, 1978) and SDT were used to explain disengagement. In this study, utilizing social development theory with ZPD as one of the key study indicators helped in understanding how the environment and instructional support correlates with teacher student interactions and attendance. The ZPD approach requires the adult to understand what the learner is able to do, scaffold the learning as needed, and determine if the instruction is engaging and learning progresses (Scott, 2008). Hanushek and Rivkin (2012) indicate that low-quality instruction affects student outcomes, hence, the importance of aligning instruction with student learning. Teachers can align instruction with student learning by obtaining an awareness of student social development.

Vygotsky's work indicates that content-focused instruction leads to mental development that triggers developmental processes that would be impossible without learning (Vygotsky, 1978). Additionally, because middle school can be a difficult time for adolescents, continued research is necessary to determine what effects instructional quality (e.g., emotional support, classroom organization, and instructional support) have on student engagement, achievement, and attendance. Thus, it is important that teachers ensure that students stay engaged because the lack of engagement could affect attendance and teachers would miss opportune instructional periods of student learning. Hanushek and Rivkin (2012) stressed that what teachers teach matters a great deal. A teacher who provides instruction and support relevant to each student's development allows students to advance their learning beyond what they could acquire on own (Vygotsky, 1978). The ecological system model and social development theory support this study, as they help

understand how the environment, including instructional support, is likely to correlate with student behavior and motivation toward learning.

Nature of the Study

This study was quantitative in nature and followed a correlation model. The design provided the opportunity for data collection using both observation and survey methods. For this study, I used two measures of instructional quality. One relied on experimental observation of the classroom; the other relied on student perception of the classroom environment. The key variables in this study included the following: instructional quality is the independent variable; student engagement, achievement, and attendance are the dependent variables; and gender is the moderating variable. This quantitative study took place on six middle school campuses in sixth grade math classrooms. A convenience sample of participants, both teachers and students, were recruited from these classrooms. Participants had to meet inclusion criteria and provide informed consent. Each teacher and student completed a demographic questionnaire to provide data on the sample, including ethnicity of teachers and students, and students' gender and age on the first week of the study.

Data collection consisted of observation of classroom instruction and student participants' responses to an instrument measuring instructional quality and student engagement. The CLASS observation tool (Pianta et al., 2002; Pianta et al., 2008) assessed instructional quality of each teacher participant, the climate of the room, the sensitivity of the teacher, the teacher's regard for students' perspectives, behavior,

classroom management, content understanding, productivity, problem solving, feedback, dialogue, and student engagement. I used the Tripod survey to collect the following data: students' willingness to respond to tasks, ability to stay on task or work alone, comfort with speaking in class, preferred learning style, teacher's instructional delivery, and thoughts on the lack of teacher's organization and its effect on learning. I collected school records to obtain class grades and attendance for the most recently completed 9-week grade period. Data were collected once during the research study with no repeated measures. To analyze the data, I used a MANOVA and moderation analysis using multiple regression. Student data were matched to teacher observation. The analysis that measures the moderating variable was collected using multiple regression to determine the influence of gender on instructional quality as a predictor of student engagement, achievement, and attendance; this method provides covariance.

Definitions of Key Terms

Attendance: The number of days a student attends at least half the day (Gottfried, 2009).

Classroom Assessment Scoring System (*CLASS)*: A classroom observational tool that evaluates instructional quality. CLASS domains capture teacher-student interactions in classrooms (Pianta et al., 2002; Pianta et al., 2008).

Classroom organization: The way that teachers manage the classroom, the type of productivity, and instructional learning that occurs (Pianta et al., 2002; Pianta et al., 2008).

Emotional support: The types of interaction that teachers provide to students through positive climate, negative responses, and sensitivity (Pianta et al., 2002; Pianta et al., 2008).

Instructional support: The teacher's ability to understand and deliver content, analyze student responses, problem solve, provide quality feedback, and good instructional dialogue (Pianta et al., 2002; Pianta et al., 2008).

Instructional quality: Classroom strategies that include classroom management, delivery of content, the effectiveness of the instruction and questioning used to implement lessons (Pianta et al. 2002; Pianta et al., 2008).

Student achievement: Achievement is operationalized as the student's class grade (Balfanz et al., 2007).

Student engagement: Engagement is measured by Tripod and defined as behavior that can be demonstrated through participation, staying on task, and feelings (Brophy, 1983; Natriello, 1984; Fredricks et al., 2011). .

Tripod student survey: This survey measures instructional quality and student engagement. The survey can capture a teacher's performance through students' feedback (Ferguson, 2012).

Assumptions

Research studies include assumptions and limitations fundamental to the research. First, I assumed that my observations and scoring were accurate for all teachers. Second, I assumed that the participants answered the survey items honestly regarding their

personal experience and to the best of their ability. Third, I assumed that students would not share answers on the survey with other students.

There are additional assumptions to meet regarding the use of a MANOVA analysis. The fourth assumption is that the MANOVA analysis included a normal distribution of variables and percentage-percentage plots were used to indicate any potential outliers for measuring multiple dependent variables for finding differences. Outliers were not present, but over-sampling was collected to cover the possible loss. The *F* test is sufficiently robust to outlier violations, and I checked data by entering data correctly and checking values. The MANOVA is sufficiently robust that slight deviations in normal distribution of the sample do not affect the validity of the results. However, I followed the necessary steps to bring the sample into a normal distribution.

A fifth assumption was that the data would show a linear relationship between variables and not a curvilinear relationship. Specifically, it is assumed that all the dependent variables are linearly related to each other, and linearity was checked by conducting a scatter plot matrix between the dependent variables. I assumed equality of variance for the chosen MANOVA. There was a violation of Box's test of equality of covariance matrices, and a Bartlett's test was performed to examine equality of variance. Box plots were used for the chosen MANOVA analysis to determine prevalent outliers. A Shapiro-Wilk test was not used to determine whether the data was significantly skewed from normal data analysis for MANOVA, because the Bartlett's test was used for its superior robustness. Data were linear and I accepted the results and present the

implications in the discussion of the study. The sixth assumption for a MANOVA was that data would not be curvilinear; therefore, I relied on linear analyses. Another assumption for conducting a MANOVA is that the data provided multivariate normality. The MANOVA is sufficiently robust to violations of the assumption of multivariate normality.

Assumptions associated with moderation using multiple regressions must be met. Therefore, I also assumed that a normal distribution between the independent variable and dependent variables would demonstrate equality among variables. It was assumed that a normal distribution would not occur, and an *F* test would be robust enough to outlier violators; I checked data by entering data correctly and checking values. I did not need to delete outliers, but over sampling would have covered any eliminated cases. Performing a Bartlett's test examined equality of variance.

A seventh assumption was that the chosen analysis would limit the ability to study a curvilinear relationship. As such, I also assumed that there would be linear relationships among all dependent variables; any deviations from linearity, would compromise the power of the analysis. The ninth assumption was that the dependent variable demonstrated equal levels of variance across the range of predators and that the tests are robust to violations and violations can be tested by entering data correctly and checking values. Finally, I assumed that multicollinearity of variables would not inflate; however, the *F* test results detected no inflation. If the multicollinearity of variables were

present in the data, fixing it would have require centering the data by deducting the mean score from each observation.

Limitations

Limitations in a study are the conditions that can hinder or weaken the evidence in the study because they cannot be controlled (Creswell, 2003). One limitation of this study was teachers' experience with instruction. Teacher experience could be a contributing factor in determining whether instructional quality has an association with student engagement, achievement, and attendance in middle school. However, I did not consider this factor in the present study. A teacher's ability to provide students good instructional direction could play a factor in the validity of the study and show a negative effect on the association between engagement, achievement, and attendance. Improving the quality of instruction and student engagement is critical to improving effective teaching for middle school students (Allen et al., 2013).

A second limitation was that I only collected data once, rather than using a repeated measures design. However, posttest data collection is appropriate because data tools are robust enough for a single data collection point. A third limitation was collecting a sufficient amount of data to ensure sufficient variance in scores, and the study could have used additional classrooms. Two different instruments were used in this study: (a) a teacher observation tool to measure instructional quality and (b) a student survey to measure instructional quality and student engagement. A fourth limitation of the analysis was collecting responsiveness data from direct observations and indirect

measures from student surveys with a small sample of aggregated classroom data to generate the mean sample. Despite these limitations, the design for this study provides the most optimal measures to examine the relationship between instructional quality and student outcomes.

Scope and Delimitations

Delimitations are boundaries placed on the study by the researcher. This study's scope included examining middle school students and their math teachers to determine the relationship between instructional quality, student engagement, achievement, and attendance within the study. One delimitation was that only math courses were studied. Therefore, the teachers recruited for the study were math teachers. The reason for selecting math teachers was that there is not much variability in teachers' understanding of math content and math tends to have the greatest spread in student grades. Students' excitement varies more about math than about other subjects due to the complexity but did not affect positive outcomes. Another delimitation was targeting the study to middle school classrooms. Focusing on middle school provided an opportunity to capture data on student engagement, achievement, and attendance. The population sample of the study represented a diverse population. Sampling for this study relied on a convenience sample and came from one of the larger charter schools. This study focuses on eleven middle schools within the same charter school district and in sixth grade classrooms. Thus, the findings may not be generalizable to all middle school students, as this study's

data describe only a selected number of individuals at selected schools. Chapter 3 provides a more detailed discussion on the delimitations of the study.

Significance of the Study

There is a need for additional research on instructional quality and its association with student engagement, achievement, and attendance. The considerable focus of educational reform on student achievement has contributed to scholarly discussions among school administrators about teacher instruction (Rothstein, 2010) and increased concern about instructional quality. This study made a unique contribution to the research literature because there is little empirical research regarding instructional quality, its relationship with student engagement, academic achievement, and attendance in middle school, and or what role gender may play in these relationships.

This study makes a unique contribution to the field because the design allows for the study of world situations without experimental manipulation. The Measures of Effective Teaching study (Weisberg et al., 2009) used observation data and survey data to measure instructional quality. However, Weisberg et al. (2009) did not determine whether attendance connected in any way with instructional quality or engagement differences between male and female students. The results of the present study could affect social change among many schools across the nation by expanding legislators' and school administrators' knowledge of instructional quality.

The results of this study may also highlight the need for improving instructional measures, supporting professional development content needs, and helping teachers and

students become more aware of keeping the school instructional content and environment interesting so that learning would occur. The results of this study showed that specific instructional characteristics, such as emotional support, classroom organization, and instructional support are associated with student engagement, achievement, and the data is useful to administrators and other stakeholders.

There are two primary implications of this study. First, the study can provide data to school administrators about student engagement and achievement, particularly differences between males and females. Second, this study should help to identify the areas of greatest need regarding important aspects of: instructional quality for predicting engagement, subsequent achievement, and association between these factors and attendance for male and female students on middle school campuses.

Previous researchers who used the CLASS assessment measured teachers' instructional quality and how their students, as a whole, fared regarding engagement (Allen et al., 2013). Few researchers have investigated instructional quality, student engagement, achievement, and attendance with gender as a moderating factor at the middle school level. Existing studies have included only one or two variables, such as instructional quality and achievement or instructional quality and engagement. Further, studies in which researchers used observation data on instruction and students' perspectives on effective teaching and engagement have been scant. Data from this study will be shared with stakeholders and policy makers at the state level to inform decisions around middle school instruction and student engagement.

Summary

Instructional quality can influence middle school student engagement, achievement, and attendance (Allen et al., 2013). However, the impact might not be the same for male and female students. Researchers have had difficulty pinpointing specific teacher instructional characteristics that influence student achievement (Grossman et al., 2010). Students exposed to 2 consecutive years of low-quality instruction struggle to recover lost ground (Hanushek & Rivkin, 2012), and teachers play a key role in student achievement (Goe & Stickler, 2008) through their interactions with students and delivery of instruction. The instructional approaches that teachers use contribute to student engagement, achievement, and attendance; thus, the quality of instruction is important. The approaches that teachers use can affect whether students become disengaged while attending school (Balfanz et al., 2007; Goldsmith & Kantrov, 2001; Jackson & Davis, 2000; Juvonen, Kaganoff, Augustine, & Constant, 2004).

Chapter 1 provided an introduction and overview of the study. The chapter also included a discussion of the problem, in addition to the study's purpose, significance, rationale, methodology, and research questions that guided this research. Chapter 2 is an exploration of the literature that supports the need for additional research on instructional quality and the association between student engagement, achievement, and attendance for male and female students in middle school.

Chapter 2: Literature Review

Introduction

The purpose of this study was to examine the relationship between instructional quality and student outcomes, as measured by engagement, achievement, and attendance, and the extent to which gender moderates this association. Researchers have linked negative changes in student outcomes such as engagement, achievement, and attendance to teachers instruction (Archambault et al., 2009; Desy et al., 2011; Rimm-Kaufman et al., 2015; Robinson & Lubienski, 2011). Instructional quality and student engagement are predictors of academic success (Dotter & Lowe, 2011), but middle schools in the United States still struggle with student engagement. Additionally, gender differences exist in students' levels of engagement and academic success (Kowalski, 1987; Legewie & DiPrete, 2012). Using gender as a moderating variable contributed to the existing literature on instructional quality and the three outcome variables. This chapter provides a review of the literature that supports the investigation of gender, middle school instructional quality, and the associations with student engagement, achievement, and attendance. I used ESM and SDT as the frameworks for this study. This chapter also provides a comprehensive review of the relevant literature that supports the investigation of middle school instructional quality and the association between student engagement, achievement, and attendance of male and female students. Major sections of this chapter include the following: theoretical foundation, challenges in measuring instructional quality, effective learning is contingent upon effective teaching, achievement and

attendance, and middle school gender differences with engagement, achievement, and attendance.

Literature Search Strategy

The works collected for this literature review were extracted from books and research journal articles, and scholarly databases such as EBSCO (an online research database), Google Scholar, ERIC, and Educational Psychology. Specific search terms used to identify the relevant literature included *instructional quality, student engagement, differences in middle school male and female engagement and attendance, middle school student achievement, gender differences,* and *transition from elementary to middle school*. The literature review includes current publications and seminal articles that were relevant to the variables of interest.

Theoretical Foundation

The ESM, (Bronfenbrenner & Morris, 1998) is one of the theoretical frameworks for this study. The ecological systems model refers to five models, but this study only uses two of the five: (a) the microsystem, linked to institutions and groups that affect school and peers and (b) the mesosystem, linked to relationships between school experiences. The ESM theorizes existing interrelationships between various elements within an ecosystem. Understanding ESM is important in the context of education because many factors affect students' growth in classrooms and this theory attempts to address those factors. Researchers have shown that ESM addresses the relationship of an individual's characteristics, growth, and development that directly influence the teacher-

student relationship and developmental outcomes (Dotterer & Lowe, 2011). I used ESM supports the investigation of teachers' instructional quality to determine whether there is an association between students' engagement, achievement, and attendance, as the theory encompasses relationships and other complex aspects of student development that enter the classroom. The ESM is relevant for this study in particular because studies imply that individual activities and interactions are critical in students' development (Bronfenbrenner, 1989). The ESM can also support understanding of the influences of instruction by examining instructional quality and student outcome, as measured by engagement, achievement, and attendance and the extent to which gender moderates this association,

A classroom is a place where teachers and students interact with each other on a consistent basis. The quality of instruction and student progress are critical to students' later academic success. In one study using the ESM model, researchers stated that classroom quality, teacher characteristics, and the relationship between student and teacher are linked to developmental outcomes and are important for any youth's development (Reyes et al., 2012). Reyes et al. (2012) applied the ESM to demonstrate that a classroom is a primary place where teachers and students interact and that the individual activities and social interactions are important. The variables Reyes et al. used included classroom climate and achievement, as well as engagement as a moderating variable. The predicted relationship showed that a warm, sensitive classroom led to the greatest student gains. The ESM provided a foundation for this study and an approach

that could effect change in a middle school setting. Bronfenbrenner's ESM supports gender as a moderating variable because the dynamic system within ESM is self-maintaining and indicates that individuals must adapt to internal drives (Bronfenbrenner, 1989). For example, instructional influences affect students differently, leaving each individual to self-motivate (Patrick, Ryan, & Kaplan, 2007).

The ESM can support understanding of the varied influences that gender can have on instructional quality, student engagement, achievement, and attendance; gender may be one of those variables in which there are identifying individual differences in learning, and this study's purpose was to uncover the extent of the differences.

Social Development Theory (SDT), (Vygotsky, 1978) is the second theoretical framework to guide this study, as it supports the understanding of how instructional quality can affect engagement, achievement, and attendance. Vygotsky's theory (Vygotsky et al., 1962), based on the transfer of knowledge, provides one approach for linking SDT to education (Bronfenbrenner, 1989). Vygotsky's work influenced the fields of education and psychology after research determined that learning and development stem from social interactions with guided learning through modeling or verbal instruction (Vygotsky, 1978). In education, Vygotsky's (1978) theory has been essential in supporting the critical need for enhancing classroom instruction and student educational development (Vygotsky et al., 1962). For example, Vygotsky's works demonstrated that the more knowing other is usually an adult who teaches students. Vygotsky believed that, when students struggle with learning, the adult should use scaffolding to extract

information from students without giving them the answer right away. The learning process of Vygotsky's SDT describes how one obtains and processes information during learning, and how cognitive, emotional, and environmental influences play a factor in learning (DeJong, 2010). SDT is instrumental because the purpose of instruction is to foster a learning environment that helps a student learn with minimal disruption. Additionally, because SDT affects learning outcomes in students, obtaining an awareness of ZPD and the vital role it has on students' education is critical.

Students' ZPD refers to a range of potential learning, via instruction and assistance from a teacher, in which a student can learn more than he or she could learn alone (Vygotsky, 1978). The ZPD requires teachers to consider individual differences and learning ability to increase achievement and interest in school (Robinson & Lubienski, 2011; Vygotsky, 1978). Research has shown that student engagement increases when a teacher considers students' individual differences and learning abilities (Taylor & Parsons, 2011). Understanding the impact instructional quality has on student engagement and achievement is critical to students' educational development because early intervention can stop the growing problem.

In this research, the focus of the study is on instructional quality and the relationship it has on student engagement, achievement, and attendance among middle school students. SDT supports the foundation of this study because the way a teacher delivers instruction can play a role in student engagement, which could affect student achievement and attendance. Classroom instruction requires teachers to interact with

students. The interaction should be collaborative, which makes instructional quality an important aspect of classroom instruction. Therefore, the need for additional research on the relationships between instructional quality, student engagement, achievement, and attendance, with gender as the moderating variable is distinct.

Factors such as teacher beliefs, as well as limited knowledge of students' educational development and academic levels, can serve as measures of understanding of instructional quality and the association between student engagement, achievement, and attendance (Vygotsky et al., 1962). These factors fit with SDT because learning is a process and, when the instruction and environment do not blend to foster positive learning and student engagement, outcomes may be adversely affected. Examining instructional quality and student outcomes (measured by engagement, achievement, and attendance), as the instructional approach changes from elementary to middle school, is important. Additionally, this study addressed Vygotsky's belief that SDT is critical in explaining the importance of fostering a positive learning environment and could provide the student a greater chance at academic success (Dotterer and Lowe., 2011; Grossman et al., 2010; Vygotsky et al., 1962).

Vygotsky's (1978) theory indicates that the adult is *the more knowing other* who holds the key to helping individual students learn. Scholars such as Permaul (2009) and Zollman (2012) used SDT in their studies, in which they focused on instruction and engagement for increasing new knowledge; they were able to identify instructional practices and specific new knowledge students need to learn. The current study builds

upon the works of Vygotsky's (1978) theoretical model and others who investigated classroom quality in preschool through 5th grade classrooms (e.g., Allen et al. 2013; Bill and Melinda Gates Foundation, 2012; Chen & Li, 2008; Dotterer & Lowe, 2011; Ferguson, 2012; Pianta et al., 2010).

ESM has implications for the practice of teaching and supports understanding the influence that instructional quality has on the classroom environment, achievement, engagement, and attendance. The ESM supports SDT in the belief that teachers' instructional quality could demonstrate significant findings to student engagement, achievement, and attendance. There is a need to conduct this study with middle school students, a point at which instructional approaches change. When teachers learn effective instructional practices and are familiar with students' ZPD, engagement in school, achievement, and attendance, they can be strategic in correcting the issues when problems occur (Addison, 1992). When students do not have consistent positive interactions with adults, it can affect their ability to stay engaged, achieve good grades, and attend school (Addison, 1992). Lack of quality engagement can also adversely affect student's cognitive development that is in line with SDT and Vygotsky's (1978) theory, indicating that the adults are *the more knowing others* who hold the key to helping individual student's learning. A multivariate research design is necessary to investigate or explain a student's development. Therefore, understanding instructional quality and student outcomes, as measured by engagement, achievement, and attendance in middle

school, is important. This approach would facilitate the investigation through a systems relationship.

Challenges in Measuring Instructional Quality

Much of the research on instructional quality has focused on student achievement, although it has been limited in examining what constitutes effective teaching and gaining student perspectives on instruction (Allen et al., 2013; Ferguson, 2012). Pianta et al. (2002, 2008) defined instructional quality as the teachers' ability to understand and deliver content, analyze student responses, problem solve, provide feedback, and engage in good instructional dialog. School districts and teachers must be able to identify misconceptions and false impressions of student mastery challenges. As school districts continue to find efficient and reliable ways to measure instructional quality, researchers continue to evaluate which are the best elements to determine instructional quality. By measuring instructional quality, schools can work with teachers to ensure they teach in-depth content and provide students with enough examples to deepen students' understanding of the content.

Some challenges for schools include the ability to measure instructional quality, manage large campuses, and utilize quality tools to evaluate it. Typically, schools use administrator observations and student outcomes to measure instructional quality, although administrators often struggle with finding the best tool to assess instructional quality. Middle schools use site-based assessments created by the district campus, an online classroom reporting system student's use to assess knowledge of content, and

professional development implementation to measure instructional quality. Study's out of Harvard University utilized video observation to determine teacher quality (Kane, McCaffrey, & Staiger, 2010, 2012; Jacobs, Doherty Lakis, Lasser, & Staresina, 2014).

The intervention and experimental design for the Harvard study included 101 principals and 347 teachers. Teachers in the treatment group recorded their classroom instruction and uploaded the video to a secure site where principals in the study could assess the quality of the classroom instruction. Administrators provided annotated feedback directly on the video screen for the teachers to review. Administrators in the Harvard study found that the video observation did not ease the burden of conducting classroom observations, and they were not quite sure it was the best approach to assess instructional quality. Assessing instructional quality in this manner does not provide sufficient information about specific instructional elements of student academic and social behavior, beliefs and feelings, student engagement, and achievement.

General supervision by an administrator or curriculum coordinator is another way schools assess instructional quality. However, administrators often struggle with recognizing quality instruction due to their misunderstandings around the content. Since principals are responsible for knowing academic standards and content for each grade, pinpointing instructional quality with the wrong tool can make it difficult to recognize and provide teachers feedback about their instructional visit. School administrators have found it challenging to measure instructional quality due to inconsistencies associated with teachers' classroom management and delivery of instruction. For example, some

teachers may teach in small groups or have a better grasp on organizing the delivery of the instruction, while others may have a better understanding of the content. Some schools require teachers to follow their 9-week teacher guides and curriculum, resulting in missed opportunities to teach key learning objectives that are critical to increasing student outcomes, but that have been difficult to measure.

The Center on Education Policy determined that schools tend to measure success in various ways. For example, schools measure success by finding the number of effective ways to raise the performance of students. Another way of measuring success is through the achievement gap between groups of students. Success and student achievement are different and can affect teacher quality. Concerns about how schools implement instructional quality suggest that, despite enormous and admirable investments of time and money, practitioners are much further from determining instructional quality (The New Teacher Project, 2015).

Stronge (2007) used a multi-year database to gather information about the elements of instructional quality. Strong based instructional quality on a teacher's professional qualifications, classrooms environment, and achievement. In classrooms where students were exposed to high performing teachers 2 years in a row, the students scored in the 90th percentile with achievment scores. Some scholars, such as those behind the Widget Effect (Weisberg et al., 2009), have researched specific elements of instructional quality including: teachers' behaviors, classroom management skills, understanding of content, ability to scaffold learning, engage students, ability to

challenge student thinking, and willingness to accept student ideas (Ferguson, 2012; Weisberg et al., 2009. The authors of the Widget Effect Project, conducted in four states with 15,000 teachers, 1,300 administrators, and over 413,700 students, found that schools failed to use adequate instructional evaluations that could provide educational decision makers credible information on individual teacher instruction (Weisberg et al., 2009). The results also showed that school districts have a tendency to assume classroom effectiveness (Weisberg et al., 2009). Discussion about how to enhance instructional quality continues, but most commentators focus on the failure of school districts to dismiss teachers who perform poorly (Weisberg et al., 2009). Encouraging teachers and students to interact in positive ways depends on the nature of effective teaching for adolescents (Allen et al., 2013). School administrators are now beginning to evaluate instruction within the classroom to improve instructional quality, with the intent to improve student achievement.

Evaluating the quality of instruction, student engagement, and student success has not been at the forefront for some school administrators because few assessment tools exist that give administrators the ability directly to measure the quality of classroom practices on a large scale (Junker, 2006). School administrators cannot appropriately measure instructional quality without quality instruments. Continued research on instructional quality was necessary to provide administrators with additional knowledge on the type of measures schools can use to measure instructional quality.

Glazerman et al. (2010) found that education could improve greatly when instructional evaluation systems include verifiable and comparable results that identify teacher effectiveness. There is a great need to address instructional quality when research findings demonstrate that 99% of teachers observed by principals and instructional staff scored above average on implementing instructional quality, yet 25% of students do not meeting academic standards (Glazerman et al., 2010). Over the years, researchers have consistently found that elementary through middle school students showed improved interest in school and achieved better grades when they attended high-quality learning programs and received high-quality instruction (Guernsey & Ochshorn, 2011).

Due to the inconsistent results from students regarding instructional quality and student engagement, the proposed study would contribute to the literature by examining gender as the moderating variable. Crossman et al.'s (2010) research targeted instructional practices in middle school, since many previous researchers investigated teacher characteristics and linked them to student achievement based on test scores; however, few have explored how instructional practices are linked to student gains using student's class grade (Grossman et al., 2010). For example, students may perform well on standardized tests, but do not show gains in classroom grades. Grossman et al. (2010) used a small sample size; the authors were unable to identify which instructional practices affected student interest and which instructional practices affected achievement. Grossman et al. (2010) supported the decision to conduct research on instructional quality and the association between student engagement, achievement, and attendance in middle

school. Glazerman et al. (2010) found that schools do have some formal assessments, but cannot differentiate among teachers' instructional effectiveness. A lack of focus on instructional quality at the middle school level has caused policy makers and school administrators to make decisions without the benefit of formally recognizing the effectiveness of teachers, which may have resulted in lost opportunities to improve student outcomes.

When one cannot measure the quality of educational content and student engagement, it can be difficult for school administrators and teachers to increase student achievement (Weisberg et al., 2009). Therefore, if teachers do not effectively implement the delivery of their instructional content, students' responsiveness in class may be limited only to what is required. The intensity of effective teaching can make a difference in how students respond to instructional content. Pianta, LaParo, Payne, Cox, and Bradley (2002) found that students, who remain on task and can function academically on their own, are not typically assessed within the classroom. Pianta et al., (2012) measured teacher quality in a valid and reliable way to understand better the instructional quality and the relationship to student responsiveness to instruction.

Although research have found that it is critical for school administrators to implement means of evaluating and enhancing the quality of instruction, few schools have done so and fewer have been able to sustain the use of good measures. Classrooms with quality instruction correlate with positive experiences in the classroom (Chika, 2012). Students struggle with learning challenging content, making it imperative that

teachers motivate and create engaging environment in the classroom to promote interest in daily lesson plans.

Educators have different ideas with regard to (a) determining a consistent definition of instructional quality and (b) identifying which practices enhance student engagement. This association is difficult to study because the criteria by which one can measure instruction changes from one study to the next. Some authors have stated that quality instruction fosters increased achievement and engagement (Pianta et al., 2002). Grossman et al. (2010) noted the difficulty in determining which instructional characteristics affect student interest in school. This literature review addresses these contradictory studies because the quality of instruction by a teacher may affect middle school students' engagement, achievement, and attendance; however, the effect might not be the same for males and females.

The results of this research study would add to the current literature and, thus, help educators institute the necessary educational tools that support the implementation of quality instruction and student engagement. Downer et al. (2007) hypothesized that the quality of instruction would contribute to better student engagement in a whole or small group setting. However, merely determining whether students engage with the whole group or in a smaller group setting does not provide critical information about characteristics of instructional quality. What teachers say and do with instruction matters and school administrators still struggle to determine the best approach for measuring instructional quality.

Observation measures for instructional quality at the early childhood level are relatively well developed and justified by research (Pianta et al., 2002; Pianta et al., 2008). The research by Pianta et al. (2002) and Pianta et al. (2008) documents teachers' interactions with students in the classroom and the effects of children's learning and development (Pianta et al., 2002; Pianta et al., 2008). Ferguson (2012) documents how students can provide critical feedback on instructional quality using a survey method. Measuring instructional quality through observations and student surveys can provide valid information on the quality of a school program (Ferguson, 2012; Grossman et al., 2010; Kane et al., 2010).

The Texas Eduction Agency in Austin Texas, for example, utilized outside observers to evaluate the instructional quality of schools with students outcomes and the school's overall rating. Such visit and report are provided to schools when the schools' academic ratings fall within the lowest overall school rating for students outcomes, based on achievement testing. Simply measuring the academic achievements of individual teachers, overall school rating, and student outcomes cannot directly measure the instructional quality of teachers. Although direct measures (such as observation) and indirect measures of students' surveys of instructional quality are beneficial, researchers have rarely used them on a large scale in grades K-12.

Due to the recent trend of measuring instructional quality in middle school, and the struggle of finding appropriate tools, schools have been slow to implement an observation approach to measure instructional quality. Education quality at the middle

school level increases among researchers and continues to be the focus of policy holders, as well as a topic of interest among academics, administrators, and curriculum leaders. The approaches to measure instructional quality outlined in this review have not specifically noted the most accurate way to measure instructional quality in middle schools. The proposed study adds to the literature by determining the effect instructinal qulaity has on student outcomes, as measured by engagement, achievement, and attendence, and the extent to which gender moderates this association.

Effective Learning is Contingent upon Effective Teaching

Real improvements for learning requires utilizing quality measures of effective teaching (Kane et al., 2010). Examining the relationship between instructional quality and student outcomes, measured by engagement, achievement, and attendance, as well as the extent to which gender moderates this association, could provide additional information about student outcomes. Bronfenbrenner's (1989) work provides the theoretical framework of this study. The ESM (Bronfenbrenner, 1989) supports the belief that the classroom environment can affect students' ability to remain focused on learning.

Classroom aspects, such as the teacher's ability to keep students engaged and interacting with lessons, the environment, and positive student-teacher relationship, could affect learning. Student progress results from active participation in reciprocal interactions with teachers, hands-on activities, and the classroom environment. Generally, in an elementary classroom, the design helps students work independently and

with the teacher around the teacher's table. In a middle school setting, classrooms typically have rows of desks and students have limited space to maneuver in their own space. Gurian and Stevens (2005) found that boys and girls learn differently and require different types of learning space, which is just one characteristic that can affect instructional quality. Best practices would suggest varied seating options such as desks, tables, easy chair, and rugs (Gurian & Stevens, 2005).

Environmental factors, both within and outside the classroom, are part of students' educational structure and can affect student learning; therefore, the quality of instruction is critical because instruction can affect student outcomes (Allen et al., 2013; Bronfenbrenner, 1989; Grossman et al., 2010). The ecological systems perspective stresses the importance of social relationships for youth across key systems such as home and school (Bronfenbrenner, 1989).

Bronfenbrenner (1989) referred to social interactions in the immediate environment as proximal processes (Bronfenbrenner & Morris, 1998). Proximal processes vary systematically as a function of the characteristics of the developing person and of the environment in which the processes occur. The proximal process between male and female students can vary based on individual interest and drive for learning which, in the end, affect student attendance. Teaching and learning will not improve if schools continue to provide inadequate feedback on instruction (Kane et al., 2010). Expanded research on the topics of attendance and achievement indicate that public elementary and middle school absentee rates generally increase along with the student

poverty rate (Finn & Rock, 1997; Grossman et al., 2010; National Center for Educational Statistics, 1996). Therefore, understanding the characteristics that increase the quality of instruction is important because it can influence learning.

Schools have moved toward high-stakes testing and accountability to increase instructional quality and improve student outcomes since the 2001 No Child Left Behind Act. Effective teaching occurs when a teacher demonstrates his or her ability to help students learn at high levels; however, some teachers struggle with improving students' academic performance (Chait, 2009). Marks (2000) conducted a study on student engagement that examined student patterns of engagement and whether the subject matter made a difference. Marks found that student engagement varied among different classes and that consistent instructional work and social support helped students to stay engaged in learning. For example, if students were interested in writing a paper about overcoming fears and they received support from their teacher, students were more likely to stay engaged in the learning process.

Instructional delivery in middle school requires students to be independent of the adult, organized in managing their class schedules, and advanced in their study skills, which can be challenging for many students. Students construct their understanding of the concepts presented. Teachers should facilitate students' interest by planning lessons that include exploration, include time for learning concepts, and facilitate understanding of concepts that students need to be successful. Students are more successful when teachers provide specific forms of instruction, rather than simply granting exposure to

instruction (Greenwood, 1991). Effective instruction is key to increasing students' knowledge needed to function effectively in and out of school (Allison & Rehm, 2007; Rothstein & Mathis, 2013). On average, students who have the opportunity to learn from teachers who achieve high marks on their teaching evaluations tend to see consistent gains in their own achievement over a 2- to 3-month timeframe, when compared to the students of teachers who achieve low marks on their teaching valuations (Chait 2009; Miller & Chait, 2008). The lack of consistent, effective teaching adds to student engagement and achievement gaps in school (Allen et al., 2011; Glazerman et al., 2010).

Historically, student engagement has been primarily about increasing achievement, positive behaviors, and a sense of belonging; it has also focused primarily on middle and high school students, where disengagement is a greater concern (Willms et al., 2009). Studies spanning more than a decade have demonstrated students' low level of engagement in classrooms (Fredricks et al., 2011; Marks, 2009). Educational researchers have consistently found that student engagement notably declines in secondary classrooms from the beginning of the year to the end of the year (Marks, 2000; Skinner et al., 2008). By high school, most students feel disengaged from school.

Steinberg et al. (1996), Balfanz et al. (2007), and Mac Iver (2007) all found that a significant number of sixth grade students who showed significant signs of disengagement tended to struggle with achievement and attendance. Factors that contribute to low engagement include large class size, a poor student-teacher relationship, and uninteresting lessons (Yonezawa et al., 2009). The main goal of the Yonezawa et al.

(2009) study was to identify early warning signs so that students could receive an intervention. Warning signs included 80% attendance or less, failing math or English, and having received an out-of-school suspension. Similarly, Balfanz et al. (2007) found that it is possible to identify issues around students' school attendance, engagement, and achievement early enough to provide them with the support and help they need.

Lack of engagement in learning is an issue that has gained national attention as policy makers, researchers, teachers, and school psychologists work toward increasing students' academic success (Downer et al., 2007). Fredricks et al. (2011) defined engagement using three different engagement categories. The first category is behavioral engagement, which includes student participation and involvement in academic and social activities. The second category is emotional engagement, which focuses on the negative and positive responses and actions toward school and social activities. The third category is cognitive engagement, which is based on the student's level of interest in school and learning. Students are thoughtful and intentional about studying and learning with cognitive engagement.

The lack of understanding as to whether instructional quality is linked to student engagement has prompted researchers to continue the examination into the causes behind middle school students' lack of interest in school and academic achievement. Some researchers, such as Eccles et al. (1984), found that middle school students are more likely to perceive school and themselves negatively once they transition from elementary school. Fyans (1979) and Harter, Whitesell, and Kowalski (1987) found that middle

school students tend to be anxious about school and that their academic motivation is low.

Some researchers support the premise that, because teachers are with students for a large proportion of the students' day, teachers can influence the outcome. Teacher beliefs, expectations, opinions, likes, and dislikes contribute to how positively or negatively the teacher presents the delivery of instruction, which can alter student responsiveness and interest in school (Effective teaching and learning environment, 2009). Researchers have also found that, from preschool years through high school years, students' intrinsic motivation decreases and they tend to feel withdrawn from learning (Harter, 1981). Additionally, because of the problem regarding students' lack of engagement in school, there has been an increased interest in recent years in gathering and understanding data on student engagement and instructional quality (Fredricks et al., 2011). Fredricks' research investigated which aspects of 21 instruments were best at measuring student's engagement from upper elementary through high school. The researchers could not identify which specific characteristics were associated with student engagement because the instruments they examined were all different and posed difficulty in answering the research questions.

Many federal lawmakers have an interest in improving teacher instructional quality because researchers of quality instruction and engagement found that effective learning is contingent upon good instruction, as is the degree to which students engage in classroom learning activities (Chen, 2008; Finn & Rock, 1997; Osterman, 2000; Wang &

Pomerantz, 2009). Some researchers argue that students are self-motivated and that students hold the key to staying engaged (Finn & Rock, 1997). Some findings indicate a correlation between student engagement and course grades (Murry, 2009; Van Ryzin, Gravely, & Roseth, 2009). These findings support the nature of this study because the belief is that course grades influence student engagement.

Failure to involve middle school students in strategic thinking and advanced reasoning happens across all socioeconomic levels, regardless of whether students are at-risk or are high achievers (Grossman et al., 2010). Additional research is necessary because few researchers have examined the extent to which instructional characteristics, such as emotional support, classroom organization, and instructional support, are associated with student engagement. Allen et al. (2013) found that these characteristics were important measures that affect student engagement. This study hypothesizes that instructional quality and student outcomes, as measured by engagement, achievement, and attendance can influence students academically.

Achievement and Attendance

Since 2002, the National Center for Education Research (NCER) has provided researchers and research institutions 591 grants to conduct research on understanding the best ways to increase student academic learning, teacher professional development, and policies that would enhance student dedication and stay in school. Researchers of student achievement and attendance have found that the gap in achievement between males and females is increasing (Balfanz et al., 2007). In middle school, adolescents experience

increased developmental changes, including changes with moods, physical growth, and development, even more than during the first 2 years of life (Balfanz et al., 2007). By sixth, seventh, and eighth grades, the brain is ready for higher-order thinking and reasoning skills, which help students prepare for high school and college (Archambault et al., 2009; Downer et al., 2007). Therefore, paying attention to instructional quality is important because it can be associated with student higher-order thinking.

Students who attend school on a consistent basis tend to have better grades than students who show increased absenteeism (Balfanz & Byrnes, 2012). Educators and policymakers have been unable to pinpoint the reasons for achievement gaps or identify the best strategies for closing the gap without considering chronic absenteeism. A study conducted in Baltimore found a connection between middle school attendance issues and differences between students' expected graduation date, due to attendance (Balfanz & Byrnes, 2012) and the study heightened the need for improving student achievement and attendance in school. Archambault et al. (2009) found that when a student disengages from school, his or her academic achievement suffers over time; this typically happens when school becomes less interesting and feels more monotonous for the student.

Student attendance and achievement are both integral parts of success in school. Missing school can prevent students from learning. Educational criteria from both the 2001 No Child Left Behind Act and the Every Student Succeeds Act of 2016 require school districts and schools to increase accountability. Increased accountability has caused school administrators and researchers to become increasingly aware of the

connection between student attendance and learning. Linked to teacher effectiveness, schools track student attendance more now than ever. Teacher effectiveness is one of the strongest predictors of student success (Allen et al., 2011; Bill and Melinda Gates Foundation, 2012a), and increased absenteeism of students could affect teachers' ability to provide consistent learning opportunities. Findings from other research studies demonstrate that students who attend school consistently have better achievement scores than those who miss school on a regular basis (Balfanz & Byrnes, 2012; Dotter & Lowe, 2011; Pianta et al., 2010).

Research findings on attendance and achievement indicate that public elementary and middle school absentee rates generally increase along with student poverty rates (Finn & Rock, 1997; Grossman et al., 2010; National Center for Educational Statistics, 1996). National Center for Education (1996) research findings indicate that an average of 6% of all students were absent on a typical school day in 1993-1994. Even modest rates of absenteeism can have serious effects on positive student outcomes. MacQuirrie (1990) indicated that a disproportionate number of male students are at risk of school failure. More research is necessary to inform those in the field of methods that would increase student achievement and attendance. Taking a closer look at the association between instructional quality, achievement, and attendance could more clearly identify the effect on student academic interest.

Middle School Gender Differences with Engagement, Achievement, and Attendance

Another important factor that could influence outcomes is the connection between gender difference associated with engagement, achievement, and attendance. Findings from studies on gender differences in student engagement, achievement, and attendance are important for justifying the need for further work that focuses on the effects of instructional quality on these outcomes (Archambault et al., 2009; Dotterer & Lowe, 2011; Fredricks et al., 2011; Goe & Stickler, 2008). Utilizing gender as the moderator and employing a direct and indirect measure may strengthen the literature by supporting middle school research, given the strong evidence of differences in achievement and later gaps in engagement. Schools follow certain standards that require them to report student progress in specific subgroups, such as gender, so including gender as a moderating variable adds to the literature. No study has examined the relationship between instructional quality and student outcomes as measured by student engagement, achievement, and attendance, while utilizing gender as a moderator. The omission of gender is somewhat surprising, given long-standing interests in instructional quality and differential gender gaps in academic achievement and attendance.

Evidence shows that behavior and cognition vary by gender, which can result in a need for different learning approaches for male and female students (Kovalik, 2008; Neu & Weinfeld, 2007). Additionally, male students seem less engaged than female students do (Kovalik, 2008). To explain this finding, it is important to differentiate between kinds of student engagement. For example, Archambault et al. (2009) found that male students

between the ages of 12 and 13 showed high levels of behavioral engagement, such as following school rules, but lower levels of cognitive engagement, which deals with the psychological aspects of learning. In contrast, Archambault et al. (2009) showed female students have higher levels of behavioral and cognitive engagement than male students do. Given these gender differences, it is critical for educators and school administrators to account for gender when assessing student achievement (Bard, 2014; Desy et al., 2011; Kovalik, 2008). The recent changes to the federal assessment guidelines provide an opportunity for educators to rethink gender in assessment of student achievement.

The 2001 No Child Left Behind Act stipulates that teachers and administrators implement high-quality educational programs that lead to high scores on standardized achievement tests (Elmore & Huebner, 2010). The Every Student Succeeds Act of 2016 replaced the NCLB and represented a significant change to student assessment guidelines. Educational research can be useful in determining effective approaches to assessing academic achievement but, in the past, academic achievement assessment has not included gender differences or student satisfaction (Edgerton, McKechnie, & McEwen, 2011). When students are engaged in activities that interest them and provide some connection to socialization and competition, they tend to stay engaged in learning (Cieniewics, 1993; Chika, 2012; The New Teacher Project, 2015). For these reasons, there is a need for more research on gender differences in the assessment of student achievement.

Findings consistently illustrate the gaps in student engagement and achievement, yet some researchers have not considered the multidimensionality of variance, which includes students' emotional and cognitive behaviors associated with student engagement (Archambault et al., 2009; Fredricks et al., 2011). Students attend school in the hopes of gaining a good quality education and staying engaged in school does play a factor in learning. Therefore, researchers should continue the search to determine which instructional characteristics examine student engagement and achievement and the differences of instructional characteristics that affect male and female students.

Attendance is another factor that can affect learning. Archambault et al. (2009) found that there is a growing gap between male and female students on attendance beginning as early as 12 years of age. Continued research was necessary to determine a possible cause of the growing problem of helping students become more interested in school. Middle school students experience the challenge of transitioning from elementary school to having to manage their learning through lecture-style facilitation from their teachers; middle school is very different from elementary school and includes challenging academic content. The previously named factors have caused students to have problems with attendance (Archambault et al., 2009; Balfanz et al., 2007).

Policy makers and school administrators have attempted to decrease gender differences in the achievement gap, but the gap still exists (Aud et al., 2010). In some cases, the policies put in place to support No Child Left Behind appear to have added new problems around gender differences with achievement (Balfanz & Byrnes, 2012;

McCarty, 2009). Researchers have found that when schools add content of interest for students and train teachers on providing adequate instructional practices that engage students and build on their existing knowledge, it can bridge the gender gap in achievement (Bill and Melinda Gates Foundation, 2012b; Rothstein & Mathis, 2013).

Boys underperform academically when compared to girls and schools with higher performing students overall have smaller gender gaps (Balfanz & Byrnes, 2012; Legewie & DiPrete, 2012; McCarty, 2009). According to one study, in classrooms, the instruction and environment channel concepts of masculinity for boys, fostering or inhibiting boy's development of anti-school attitudes, behavior, and achievement. However, instruction and environment do not negatively affect girl's attitude, behavior, and achievement (Legewie & DiPrete, 2012). In a study that utilized longitudinal data, the researchers found no achievement gap in kindergarten; however, beginning in 2nd grade and continuing through middle school, the achievement gap was consistent between boys and girls (Robinson & Lubienski, 2011).

Utilizing gender as the moderating variable to determine whether instructional quality affects student engagement, achievement, and attendance will add to the literature because instructional quality perspective is obtained from an observer and student survey. Due to the substantial changes in education through the ESSA (2016), students' perspectives on instruction and engagement, as well as the need to understand the theoretical process of learning, indicate a need for additional research. New information can support school administrators and educators as they work toward enhancing student

outcomes and implementing quality assessment plans for instructional quality (Chati, 2009; Weisberg, Sexton, Mulhern, & Keeling, 2009).

Summary

This chapter outlined the lack of solutions and literature on the need and importance of assessing the relationship between instructional quality and student outcomes, as measured by student engagement, achievement, and attendance while utilizing gender as a moderating variable within the middle school. Researchers have completed many quantitative studies on instructional quality and its association with student engagement, achievement, and attendance. However, few researchers have focused on the variables in this study as a whole; even fewer have examined the role of gender in moderating the relationship between the variables.

Previous scholars have found that some middle school students describe their school experience as an unsatisfying and unmotivated time (Allen et al., 2013), which has become a great concern for school officials. To improve student engagement, achievement, and attendance for middle school students, researchers have discovered that significant improvements in student learning should include the teacher as the centerpiece (Darling-Hamond, 1997; Mendro, 1998; Pecheone & Wei, 2009; Stronge & Tucker, 2000; Stronge, Ward, Tucker, & Hindman, 2007; Tucker & Stronge, 2005). Teachers play an important role in student learning, and improving the quality of teaching is critical to student success (Bill and Melinda Gates Foundation, 2012a).

The literature provides ample evidence that some teachers tend to produce more and better learning among their students than other teachers, and the findings have been linked to instructional quality (Kane, McCaffrey, & Staiger, 2010, 2012; Rivkin, Hanushek, & Kain, 2005). Teacher characteristics and the relationship between students and teachers are linked to developmental outcomes and are important for any youth's development (Reyes et al., 2012). Researchers support the belief that teachers teach with the goal of increasing outcomes, but teachers have expressed that challenges such as grading papers and negative student behavior prevented them from teaching effectively (Bard, 2014). Gathering student perspectives in understanding teacher effectiveness is important, and researchers in the field are just now beginning to include student perspectives (Bill and Melinda Gates Foundation, 2012b).

Students spend many hours in classrooms and can help with predicting learning outcomes (Ferguson, 2012). Teaching is complex and instructional quality is too difficult to measure with one tool (Bill and Melinda Gates Foundation, 2012b). Therefore, obtaining student perspectives was a valuable source of ddata for this study. The hypothesis of this study is that the relationship between instructional quality and student outcomes, as measured by student engagement, achievement, and attendance of middle school students, demonstrated positive relationships. This study added to the literature by providing additional research that is exclusive to middle school by investigating instructional quality and its relationship to the variables through classroom observations and collecting student perspectives on instructional quality and student engagement. In

Chapter 3, I discuss the methodology of the study, including an explanation of the research design and rationale, settings and sample, recruitment, data collection and analysis, instrumentation and materials, threats to validity, and ethical procedures.

Chapter 3: Research Method

Introduction

This chapter addresses the research design and approach used to examine the relationship between instructional quality and student outcomes as measured by student engagement, achievement, and attendance. I examined gender as a moderating variable. Two distinct measuring tools, a direct measure (CLASS) and an indirect measure (Tripod), were used to measure instructional quality. I analyzed the CLASS observation scores of instructional quality, along with measures of student engagement, achievement, and attendance using a MANOVA. The Tripod Student Survey scores of instructional quality and student engagement, along with achievement, attendance, and gender as a moderating variable, were analyzed using a multiple regression with moderation analysis. In this chapter, I describe the implementation of the study, research design rationale, setting and sample, data collection and analysis, instrumentation and materials, protection of human subjects, and dissemination of findings.

Research Design and Rationale

This study followed a correlational design using observations, a student survey, as well as additional quantitative data that included academic grades, attendance records, and student gender. I chose a correlational design for this study because there was no manipulation of variables or conditions. The goal of correlational design studies is to determine if, and to what extent, there are relationships among the variables (Creswell, 2003). Reyes et al. (2012) and Allen et al. (2013) found that when researchers study

social behavior, educational research, engagement, traits, and situations, a correlational design can provide accurate information when field testing and exploring various relationships.

To measure instructional quality and student engagement, I used classroom observations of instruction and student surveys. Each student's grade for the most recent 9-week period was collected from the teacher or school records and attendance was collected for the most current 9-weeks from school records. Quantitative design is commonly used for educational research because it allows researchers to capture descriptive statistics of variables as well as examine statistical relationships between independent and dependent variables (Creswell, 2003). Researchers who have examined the same variables that I have in this study have utilized a quantitative methodology (Archambault et al., 2009; Dotterer & Lowe, 2011; Goe & Stickler, 2008; Fredricks et al., 2011; Pianta et al., 2008; Pianta et al., 2010).

In this study, I examined the association between instructional quality and engagement, achievement, and attendance, as well as gender as a moderating variable. I used two measures of instructional quality. First, the CLASS overall instructional quality score was assessed through direct observation. Second, the Tripod score was used to indirectly assess instructional quality through the student survey. I measured three dependent variables of student outcomes: engagement, achievement, and attendance using the Tripod overall score of student engagement, student math course grade, and school attendance. The following research questions and hypotheses were investigated in

this study:

RQ1. Is there a relationship between instructional quality and each of the three outcome variables, student engagement, achievement, and attendance?

$H_0$1: There is no relationship between instructional quality and student engagement.

H_a1: There is a relationship between instructional quality and student engagement.

$H_0$2: There is no relationship between instructional quality and achievement.

H_a2: There is a relationship between instructional quality and achievement.

$H_0$3: There is no relationship between instructional quality and attendance.

H_a3: There is a relationship between instructional quality and attendance.

I tested the hypotheses for Research Question 1 using a MANOVA with the independent variable of instructional quality and dependent variables of student engagement, achievement, and attendance. MANOVA was best suited for testing these hypotheses because it allows for simultaneous analysis of more than one dependent variable within this study. This type of analysis increases the likelihood of identifying interactions between instructional quality, student engagement, achievement, and attendance. Previous scholars have not utilized the same number of dependent variables within the same study and study design required the use of ANOVA, (Fredricks et al., 2011; Pianta et al., 2010), which makes the use of MANOVA for this study a better selection (Creswell, 2007; Dupont & Plummer, 1990).

RQ2. Does gender moderate the association between instructional quality and each of the

three outcome variables (student engagement, achievement and attendance)?

$H_0 4$: Gender does not moderate the association between instructional quality and student engagement.

$H_a 4$: Gender does moderate the association between instructional quality and student engagement.

$H_0 5$: Gender does not moderate the association between instructional quality and achievement.

$H_a 5$: Gender does moderate the association between instructional quality and achievement.

$H_0 6$: Gender does not moderate the association between instructional quality and attendance.

$H_a 6$: Gender does moderate the association between instructional quality and attendance.

The hypotheses for Research Question 2 were tested with moderation analysis using a multiple regression with the Tripod instructional quality score serving as a predictor variable, gender as a moderating variable, and the Tripod student engagement score, student mathematics grade, and student attendance number as the outcome variables. Instructional quality was recategorized as either low or high, according to where the initial score fell in relation to the sample mean. Utilizing a study design that includes two distinct measures, such as observations and survey data, provides an

opportunity to determine the relationship between the independent variable and the three dependent variables as a whole.

Methodology

Setting

The setting for this study is a large charter school in Texas. Charter schools are publicly funded, self-sufficient schools that are not usually linked to school districts. Charter schools have more autonomy than traditional public schools in exchange for increased accountability. The charter school that was the focus of this study has 11 middle school campuses within the charter school program, and I intended to conduct the study in 11 math classrooms. Math was the focus area of this study because that content area has the greatest range of grades (Goldsmith & Kantrov, 2001; Greenwood, 1991). Middle schools targeted for participation contained male and female students of Hispanic, African American, Asian, Caucasian, and other ethnicities. The demographics of the teachers targeted to participate in the study were male and female Hispanic, African American, and Caucasian. Teachers contracted by the school were targeted for participation. Teachers had to have a 4-year degree and teaching certificate. Middle schools in the study are based on convenience and availability, which are the best approaches to obtain participants for this study (Creswell, 2007).

Samples

Due to the nature of the research questions and instrumentation used, two samples were needed for this study, and two sample size calculations were needed to compute the

sample sizes. Addressing Research Question 1 required collecting data from teachers using the CLASS observation tool. I used G*Power software to determine the power analysis and ideal sample size for the number of teachers needed (Faul, Erdfelder, Buchner, & Lang, 2009). The "Test Family" is "F-test" and the specific statistical test being "MANOVA: Global effects." The type of power analysis used was "post hoc." The error of probability was chosen based on the alpha probability of .05, which indicates that 95% of the time a statistical difference between groups would be detected. The default power (i.e., the probability of determining a "true" effect when it occurs) of .8 was chosen. I selected this value based on common practice of Statistical Package for the Social Sciences (SPSS) to achieve a power of .8 (Faul et al., 2009).

A small effect size of .10 was used in determining the sample size for the teacher participants (Creswell, 2007; Dupont & Plummer, 1990). Creswell (2007) recommends using small effect sizes based on the availability of participants and numerical calculations that are consistent with similar studies. The minimum suggested sample size is 12 teachers.

The second sample came from the student population, since Research Question 2 required collecting data from students using the Tripod survey. G*Power software was used to determine the power analysis and ideal sample size for the number of students needed (Faul et al., 2009). The "Test Family" is "F-test" and the specific statistical test being "Multiple Regression: Omnibus." The type of power analysis used was a priori because this study used planned comparisons. The selection of the error of probability

was based on the alpha probability of .05. The default power (i.e., the probability of determining a "true" effect when it occurs) of .8 was also chosen. This value was selected based on the common practice of SPSS to achieve a power of .8 (Faul et al., 2009).

No studies could be uncovered using all the variables in this study. Therefore, research resources from Creswell (2007) and Dupont and Plummer (1990) were used to determine the effect size. An effect size of 0.15 was used to determine a medium effect size using the F-test for multiple regression (Creswell, 2007; Dupont & Plummer, 1990). Creswell (2007) recommends using small effect sizes based on the availability of participants and numerical calculations that are consistent with similar studies.

The minimum suggested sample size was 119 students, but I oversampled and obtain consent from as many students possible. There was 11 middle schools, 18 math teachers, and 506 students enrolled in math classes from which I recruited participants. If necessary, the contingency plan for this study was to oversample by 5% and obtain data from teachers and students at other middle school campuses to ensure the minimum sample size is met after outliers and incomplete cases have been eliminated.

A MANOVA power analysis for teachers included two groups indicating low and high levels of instructional quality. The dependent variables were measured using the mean score of student engagement, achievement, and student attendance for the classroom. Multiple regression analysis included two groups with low and high levels as the indicator of instructional quality. The dependent variables were measured using the mean score of student engagement, achievement, and attendance for the classroom.

Gender, the moderating variable, were measured individually. The planned MANOVA is not the best measure to analyze gender as a moderating variable because the teacher sample size may not allow the application of gender as a data point.

Recruitment

Before recruitment and data collection began, I obtained approval from the Walden Institutional Review Board under study number: 05-19-17-0241539 and the appropriate decision-makers from each school. A meeting was conducted with the school curriculum coordinator and principals to explain the design and implementation of the study and answer any questions. Letters of cooperation was given to the principal at each middle school for signature. Teacher and student participation in the study was entirely voluntary and there was no randomization of participants. Teachers were provided with a recruitment packet. Teacher consent forms was deposited in a secure location in the school office, where I collect them. Participating teachers sent recruitment packets home with each student. Parents completed consent forms, and participating students were provided signed assent forms. Parental consent forms and student assent forms were also deposited in a central location in the school office, where I collected them. I obtained permission from parents to collect grades from the most current 9-week grading period and attendance for each participating student, which was included as part of parental consent. Student assent was obtained from students whose parents gave consent to participate.

Data Collection and Analysis

As part of the data collection process, participating teachers completed demographic questionnaires on the day I conduct classroom observations. Instructional observations using the CLASS tool was collected via paper-and-pencil instrument, and observations were recorded on a score sheet. Classroom observations was completed during a 2-week period during the first and second period of the day. Students who did not receive parental consent to participate in the study remained in the classroom while the CLASS observation was conducted because the observation focused on classroom instruction, not the individual students. No identifying student information was be collected as part of the CLASS observation.

Tripod data was collected from students using paper pencil version of the instrument. The survey included 60 questions and required approximately 20 minutes to complete. Students completed their demographic information when completing the student survey online with school computers. Students completed the survey at school the same week of the CLASS observations during study hall or library time. I met with the school curriculum coordinator to ensure students had adequate time to complete the survey outside of regular instruction time. The charter school allocated time for students to go to the library and complete the survey. I proctored the survey completion and answered any questions that arose. Students who did not provide assent did not complete the Tripod Student Survey. The participants' math grade for the most recently completed

9-week period was used for data analysis. Student attendance data was collected from teacher or school attendance records for the same period.

The collection of data occurred at one time point during this study and there are no repeated measures. The data derived from the teacher sample, with an overall instructional quality score was obtained from the CLASS observation tool. Within each teacher's classroom, the participating students' achievement scores, attendance numbers, and student engagement scores obtained from the Tripod survey was averaged to create a mean classroom score for each dependent variable. Obtaining mean classroom scores for each dependent variable is necessary. This data point aided in understanding the frequency between instructional quality and the three outcome variables. The mean score is important because the mean score was used as the dependent variable score in the teacher data set. Two separate data sets are necessary, one for the teachers and one for students. A small sampling of teacher observation data, which requires the generation of mean classroom scores for the dependent variables for each teacher, were necessary.

In order to test Hypothesis 1, a MANOVA was conducted using the CLASS instructional quality score as the independent grouping variable and classroom mean student engagement, achievement, and attendance scores as the dependent variables. The population mean, obtained from the CLASS manual, was serve as the criterion to recode the instructional quality total score from the CLASS into a Low or High category score. The analyses are significant, post hoc analyses were conducted and further analysis was

incorporated. The independent variables in a MANOVA are categorical and can be assigned without order.

In order to test Hypothesis 2, multiple regression analysis was used to examine gender as a moderating variable between instructional quality and each of the three outcome variables, student engagement, achievement, and attendances. Three regression models were run, one for each dependent variable. The scoring method determined by the Tripod manual provided an overall raw score for instructional quality. The dependent variable of student engagement was obtained using the Tripod scoring method for obtaining the overall scores. The dependent variables of achievement and attendance was derived from each participant's math course grade and a number of days present within the most recently completed 9-week period. Data for the gender variable came from self-report**.** Interaction relationships was determined by centering the mean of instructional quality and multiplying scores by gender to create the interaction term. The SPSS version 20 was used to run data analyses, which is one analysis tool researchers often use in educational research (O' Dwyer & Parker, 2014). Data input on SPSS was checked at every data point to ensure accuracy.

Instrumentation and Materials

This study utilized two different measures that are both valid and reliable. Data collection instruments in this study consist of a teacher observation tool (CLASS) and student survey (Tripod). The CLASS tool provided a means to obtain data on nonverbal expressions of feelings, interaction, and quality of instruction through direct experiment

observation (Kawulich, 2005; Schmuck, 1997). The Tripod Student Survey is a systematic method composed of quantitative descriptors of the elements of instruction and student engagement (Jansen, 2010). It provided an indirect measure of instructional quality from the student's perspective.

Researchers have used the CLASS, developed by Pianta et al. (2010), to assess teacher instructional quality and student engagement and was used as the classroom observation tool in this study. CLASS encodes instruction through teacher-student interactions from three broad domains of 43 items using a 7-point Likert scale, with ratings made in the first 20 minutes of observation. I met certification requirements, which allowed me to administer the instrument and properly score the instrument as outlined in the CLASS manual. I documented observation on the score sheet and adhere to CLASS observation rules. Validation of the CLASS measure was conducted in over 3,000 classrooms (Pianta et al., 2008; Pianta et al., 2010). The CLASS has been validated in over 3,000 classrooms.

The CLASS includes three broad domains with 43 items across three domains: (a) emotional support, with positive climate, negative climate, teacher sensitivity, and regard for student perspectives as subdomains; (b) classroom organization, with subdomains of behavior management, productivity, and instructional learning formats; and (c) instructional support, with subdomains of content understanding, analysis, problem solving, quality of feedback, and instructional dialogue (Pianta et al., 2008). CLASS scoring uses a seven-point Likert-type scale with descriptions of low (one, two), mid,

(three, four, five), and high (six, seven) ranges **(**Pianta, 2001; Pianta et al., 2008). The CLASS is a reliable and valid tool for assessing instructional quality, as evidenced by a Cronbach's alpha of .78. Validity was established by participating in a 2-year research project to test the validity and reliability of instruments that measure teaching effectiveness (Bill & Melinda Gates Foundation, 2012; Weisberg et al., 2009).

The Tripod Student Survey (Ferguson, 2012) was used to measure instructional quality from the students' perspective as well as student engagement. The Tripod's three broad domains are: (a) content, with 15 items pertaining to the teacher's deep understanding of curriculum; (b) pedagogy, with 20 items that address the use of effective instructional techniques; and (c) relationships, which includes 40 items regarding teacher and student care for each other, inspiration, and motivation (Ferguson, 2012). The Tripod survey also includes that allow students to rate teacher instruction, interaction, student engagement, and interest in learning. The Tripod survey uses a five-point Likert-type scale for scoring responses including: (1) never, (2) some of the time, (4) most of the time, and (5) all of the time. Tripod scoring ranges include <200 (low), 275-350 (medium) & 425-500 (high). This survey takes up to 20 minutes to complete. Sample survey questions include the following:

1. In this class, we learn a lot almost every day.
2. My teacher makes sure that we think about things we read and write.
3. My teacher asks questions to be sure we follow along.
4. My teacher would notice if something is bothering me.

5. Students feel comfortable sharing their ideas in this class.

6. Our class stays busy and does not waste time.

The Tripod survey is the only study tool in the Measures of Effective Teaching Project to receive consistent validation on items within the tool (Bill & Melinda Gates Foundation, 2012; Kane, Kerr, & Pianta, 2014). The validation for the Tripod survey consisted of examining the consistency of student engagement and teacher practices through survey questions in different classrooms, response inconsistencies caused by a weak relationship between items, and disagreement between students in the same classroom with over 4,000 students. The observation overall validity rating between users achieved .75 accuracy. Composite level reliability of the Tripod survey has been used in over 898 upper elementary classrooms and has achieved above a .80 standard deviation, in regards to item reliability because of the strong correlation between constructs, and is the final figure for Tripod measure reliability. Additinally, student achievement and attendance records were collected.

Operationalization of Variables and Calculation of Scores

Values of instructional quality, as measured by the CLASS, was calculated as follows. First, 43 items were summed to create a total raw score based on a seven-point Likert-type scale **(**Pianta, et al, 2001; Pianta et al., 2008). The total possible score ranged from 43 to 301. Second, the scores were then categorized into a low or high value using the population mean provided in the CLASS manual as the comparison point **(**Pianta et

al, 2001; Pianta et al., 2008). Third, the continuous data was changed to dichotomous scores to use it as an independent variable.

The value of instructional quality and student engagement, as measured by the Tripod, were calculated as follows. First, overall level of effectiveness scores was calculated using the five-point Likert-scale. There are 60 questions on the survey and the range in scores is <200 (low); 275-350 (medium); 425-500 (high). The survey had seven sections, which each include between seven and eight items. The scores were added from each section to create a total score. Questions were scored using a five-point scale. Percentages of positive or negative responses from the survey by classroom was used to explain how many students from each class rated the teacher low or high. The scores for gender, as the moderating variable, was calculated individually for each dependent variable by running three multiple regression analyses in SPSS. Scores for gender were obtained from the three multiple regressions analyses. A multiple regression approach was selected because this type of data set is more likely to explain the value and frequency between instructional quality and the three outcome variables.

The demographic questionnaire gathered demographic data for the moderating variable of gender. Attendance was measured by collecting the number of days that the student was present within the most recently completed 9-week grading period. The achievement variable came from the course letter grade given in math for the most recently completed 9-week grading period. This information was obtained from each student record. Student attendance was collected from each teacher or from school

attendance records for the most recently completed 9-week grading period. Research data collected from participants took place through a secure method.

Threats to Validity

Internal validity refers to the extent to which one can make a causal claim based on the study validity of the causal inference in the study (Campbell & Stanley, 1963). Internal validity is strengthened in this study because the observer must complete a certification process before conducting observations. The weakness of this study regarding internal validity came come from students' inability to complete the survey due to its length. External validity refers to how well data and theories from one setting, treatment variables, and variables apply to another setting (Campbell & Stanley, 1963). External threats to the study include the timeframe for data collection, since student attitudes toward teachers and the school could change when state academic testing begins. I controlled for external threats by scheduling an appropriate timeframe for the study.

Ethical Procedures

Walden Institutional Review Board approved the present research project to ensure the safety of all participants, under approval number: 05-19-17-0241539. I obtained approval from school district administrators and principals from participating middle schools in writing prior to beginning the study. I collected consent forms from parents and teachers, and kept them separate from other data and in a locked file cabinet in my office. Consent forms included information that outlines the scope of the study and

safety risks. The identity of participants and any data that could reveal the identity of participants remained confidential. The CLASS and Tripod Student Survey included a participant identification number for each teacher and student. Participants received a full explanation of the study and the use of the data in writing before any data collection began. No financial inducements or coercion to pressure participants, which could potentially skew data results was used. Once the study was complete, data was stored electronically on a computer that is password protected for a period of five years, at which time will be destroy.

Dissemination of Findings

I will present findings of this study at conferences and in peer-reviewed papers. Additionally, because of the nature of the study, the findings could have significant implications for reform efforts. I will share the results of the study with participants, parents, school leaders, and educational professionals in a presentation and written format. I will present information to parents at the school's parent meeting.

Summary

In this chapter, I outlined the research plan for implementing this quantitative study on a middle school campus. To ensure reliable results, 11 middle school teachers were enrolled and 119 students in this study. Convenience sampling were used to obtain participants. A quantitative design was used to provide insight on the relationship instructional quality exhibits on student engagement, achievement and attendance, with gender as the moderating variable. Instructional quality is the independent variable and

student engagement, achievement, and attendance are the dependent variables in this study. MANOVA and multiple regression was used as the data analysis measures. The data collection tools in this study include an observation tool (CLASS) and student survey (Tripod Student Survey). Additional variables include student achievement and attendance obtained from students current math classroom grade and attendance documentation from the teacher or school curriculum staff.

Chapter 4: Results

Introduction

The purpose of this study was to investigate the relationship between instructional quality and each of the three outcome variables, student engagement, achievement, and attendance and the extent to which student gender moderates these associations. For this investigation, I used classroom observation and student survey data. The study setting was a middle school campus with 11 math teachers and 160 sixth grade students. The study was designed to obtain data from middle school teachers and children to examine instructional quality and examine its relation with student engagement, achievement, and attendance. Gender as a moderator was also examined. Chapter 4 provides a review of the study's research questions and hypotheses, a description of the timeframe and data collection, as well as recruitment and response rate. Chapter 4 also includes descriptive report statistics that characterize the sample and a summary of the research question. The following research questions guided the study:

1. Is there a relationship between instructional quality and each of the three outcome variables: student engagement, achievement, and attendance?
2. Does gender moderate the association between instructional quality and each of the three outcome variables, student engagement, achievement, and attendance?

Recruitment for this study lasted approximately 4 weeks. The period for the study began during the Fall of 2017 at the start of the second 9-week grading period, from October to mid-December.

Data Collection

As part of the data collection process, participating teachers completed demographic questionnaires on the day of classroom observations. Instructional observations using the CLASS tool were collected with paper and pencil and observations were recorded on a score sheet. I collected Tripod data from students using the paper and pencil version. The survey included 60 questions and took students up to 20 minutes to complete. Students completed their demographic information when they completed the student survey using a paper and pencil version. Students completed the survey at school the same week or 1 week after the CLASS observations, during study hall or library time. Using a paper and pencil version of the student survey was necessary because the school technology department had a firewall that would not allow students to access the survey online. All data were entered into an electronic format for data analysis. I ensured the accuracy of data entry by checking all data entered three times. The school administrator provided the final achievement and attendance scores. Obtaining survey data using paper and pencil was the only significant change or deviation from the data collection plan described in Chapter 3.

The student sample consisted of 160 individuals, as calculated with G*Power, and included 79 (49.4%) male students, and 81 (50.6%) female students. Most students were

Hispanic (54.4%) followed by Black/African American (33.8%), White (2.5%), and Asian American (1.9%). Other ethnicities made up the remaining 7.5% of the sample. Tables 1 and 2 depict this information.

Table 1

Gender

	N	%
Male	79	49.4
Female	81	50.6
Total	160	100.0

Table 2

Ethnicity

	N	%
Asian	3	1.9
Black/African American	54	33.8
Hispanic American	87	54.4
Other	12	7.5
White	4	2.5
Total	160	100.0

Instructional quality of the teachers as measured by the CLASS observation ranged from 94 to 200 (M = 132.69, SD = 35.30). Instructional quality of the teachers as measured by the Tripod survey ranged from 118 to 248 (M = 200.66, SD = 25.19); Student engagement ranged from 2 to 6 (M = 4.02, SD = 1.49); Student achievement ranged from 0 to 4 (M = 2.56, SD = 1.34); Student attendance ranged from 0 to 4 (M = 1.79, SD = 1.10). Table 3 includes this information.

Table 3

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. deviation
CLASS instructional quality score	160	94	200	132.69	35.30
Tripod instructional quality score	160	118.00	248.00	200.66	25.19
Student engagement	160	2.00	6.00	4.02	1.49
Achievement	160	.00	4.00	2.56	1.34
Attendance	160	0	4	1.79	1.10

In the sample, 45.6% of the CLASS instructional quality scores were considered "low," and 54.4% were considered "high," based on the number of participants who fell below and above the median score (*Mdn* = 112.00). Using the Tripod survey, 48.8% of the sample scores were considered "low" and 56.3% "high" scores (*Mdn* = 204). In order to use CLASS and Tripod data as independent variables for analysis, the continuous data were recoded into dichotomous scores, high and low.

Table 4 depicts CLASS instructional quality for low and high groupings. There were 73 (45.6%) scores in the sample assigned to the *low* grouping and 87 (54.4%) scores in the sample assigned to the *high* grouping for CLASS instructional quality.

Table 4

CLASS Instructional Quality Low and High Groupings

	N	%
Low	73	45.6
High	87	54.4
Total	160	100.0

Table 5 depicts Tripod instructional quality for low and high groupings. There were 70 (48.8%) scores in the sample assigned to the low grouping and 90 (56.3%) scores in the sample assigned to the high grouping for Tripod instructional quality

Table 5

Tripod Instructional Quality Low High Groupings

	N	%
Low	70	48.8
High	90	56.3
Total	160	100.0

Results

A MANOVA was conducted, using the CLASS instructional quality scores as the independent grouping variable and classroom mean of student engagement, achievement, and attendance scores as the dependent variables. ANOVA analysis was added because of a BOX test of equality violation. In order to test Hypothesis 2, I used multiple regression analysis to examine gender as a moderating variable between instructional

quality and each of the three outcome variables, student engagement, achievement, and attendance. Three regression models were run, one for each dependent variable.

Research Question 1

Two-way MANOVA was performed to answer the first research question: Is there a relationship between instructional quality and each of the three outcome variables, student engagement, achievement, and attendance?

The two independent variables were instructional quality, as measured by the CLASS observation scores (recoded into dichotomous low and high groups) and instructional quality as measured by the Tripod survey (recoded into dichotomous low and high groups). The three dependent variables were student engagement, student achievement, and student attendance. Before conducting the MANOVA analysis, the assumptions of normality, linearity, and outliers were assessed. The next section will address the results of checking for these assumptions.

Normality. The two-way MANOVA assumes that the data is multivariate normal. Univariate normality is a necessary condition of multivariate normality and was tested by computing skewness and kurtosis statistics of each dependent variable for each corresponding grouping of the two independent variables. There were no skewness or kurtosis statistics that fell outside +/- 3, thus there were no significant violations of the normality assumption. According to Kline (1998, 2005), data with a skew above an absolute value of 3.0 and kurtosis above an absolute value of 8.0 are considered

problematic. Using this criteria, there are no issues with normality. Tables 6 through 9 below depict these statistics.

Table 6

Skewness and Kurtosis Statistics: CLASS -Low and Tripod Low

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Student engagement	43	-.66	.36	-1.65	.71
Achievement	43	.02	.36	-1.09	.71
Attendance	43	.05	.36	-.18	.71

Table 7

Skewness And Kurtosis Statistics: CLASS -Low and Tripod High

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Student engagement	30	-2.81	.43	6.31	.83
Achievement	30	-.61	.43	-.48	.83
Attendance	30	-.19	.43	.46	.83

Table 8

Skewness And Kurtosis Statistics: CLASS -High And Tripod Low

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Student engagement	27	-.95	.45	-.92	.87
Achievement	27	-.48	.45	-1.25	.87
Attendance	27	-.08	.45	-.23	.87

Table 9

Skewness And Kurtosis Statistics: CLASS -High and Tripod High

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Student engagement	60	-.56	.31	-1.43	.61
Achievement	60	-1.29	.31	1.61	.61
Attendance	60	-.31	.31	1.36	.61

Linearity. In a two-way MANOVA, there needs to be a linear relationship between each pair of dependent variables for each cell of the design. This assumption was tested through inspection of the scatter plot matrix. Three scatterplots comparing pairs of the dependent variables each showed there was an approximate linear relationship.

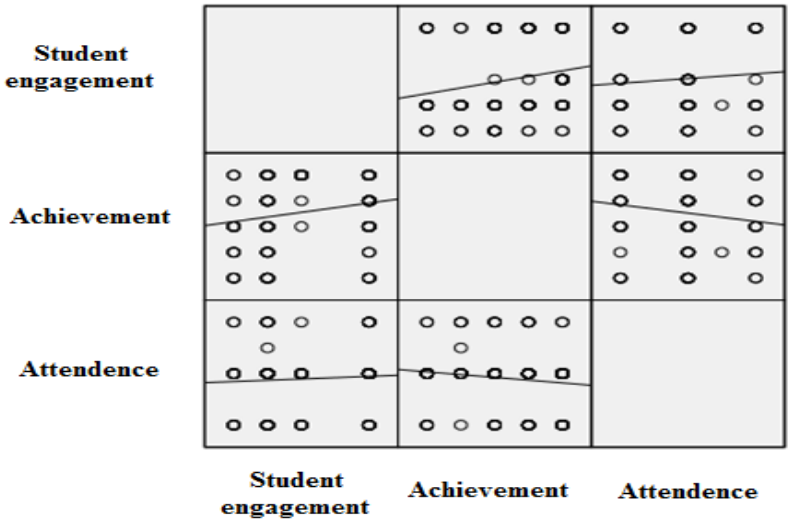

Figure 1. Matrix scatter plot. showing the relationship between each pair of the three dependent variables student engagement, achievement, and attendance.

Multivariate outliers. Multivariate outliers are data points that have an unusual combination of values on the dependent variables. MANOVA is very sensitive to multivariate outliers (Tabachnick & Fidell, 2014). Mahalanobis distance was used to determine whether a particular case (e.g., participant) might be a multivariate outlier. These distances were compared against a chi-square ($\chi 2$) distribution with degrees of freedom equal to the number of dependent variables (in this case 3) and an alpha level of .001 (i.e., statistical significance declared at $p < .001$) (Tabachnick & Fidell, 2014). Distances ranged from .36 to 15.73. The critical chi-square value for 3 degrees of freedom is 16.27, thus there were no multivariate outliers since no distances fell beyond this critical value.

MANOVA Results. A two-way MANOVA was conducted to examine the relationship between instructional quality and each of the three outcome variables: student engagement, achievement and attendance. Tables 10 and 11 depict descriptive statistics for the dependent variables for low and high groupings of CLASS and Tripod instructional quality.

Table 10

Means And Standard Deviations Of Student Outcome Variables By CLASS Instructional Quality Group

	Low group (n = 73)		High group (n = 87)	
	M	*SD*	*M*	*SD*
Student engagement	2.75	0.43	5.08	1.19
Student achievement	2.16	1.34	2.89	1.25
Student attendance	1.7	1.14	1.87	1.05

Table 11

Means And Standard Deviations Of Student Outcome Variables By Tripod Instructional Quality Group

	Low group (n = 70)		High group (n = 90)	
	M	*SD*	*M*	*SD*
Student engagement	3.63	1.5	4.32	1.41
Student achievement	2.07	1.44	2.93	1.13
Student attendance	1.84	1.22	1.76	0.99

There was a violation of Box's test of equality of covariance matrices, F (18, 46191.260) = 4.945, $p < .001$. Due to this violation, caution must be used in interpreting

the MANOVA results due to the reduced power of the test with this type of violation. As a result of this violation, the Pillai-Bartlett trace (*V)* as an omnibus multivariate analysis of variance test statistic was used instead of Wilks' Λ for its superior robustness to heterogeneous variances (Olson, 1979).

There was no interaction effect between CLASS and Tripod instructional quality on the combined dependent variables, F (3, 154) = .652, p = .583, Pillai-Bartlett trace V = .013, partial $\eta 2$ = .013. There was a significant main effect for CLASS instructional quality, F (3, 154) = 78.96, p < .001, Pillai-Bartlett trace V = .606, partial $\eta 2$ = .606. and for Tripod instructional quality, F (3, 154) = 3.957, p = .009, Pillai-Bartlett trace V =.072, partial $\eta 2$ = .072. This information can be found in table 12 below.

Table 12

MANOVA Multivariate Results

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.961	1250.548	3.000	154.000	.000	.961
CLASS Instructional Quality	Pillai's Trace	.606	78.960	3.000	154.000	.000	.606
Tripod Instructional Quality	Pillai's Trace	.072	3.957	3.000	154.000	.009	.072
CLASS Instructional Quality * Tripod Instructional Quality	Pillai's Trace	.013	.652	3.000	154.000	.583	.013

a. Design: Intercept + CLASS_InstructionalQual_2Groups + Tripod_InstructionalQual_2Groups + CLASS_InstructionalQual_2Groups * Tripod_InstructionalQual_2Groups

b. Exact statistic

Post Hoc Tests. As a follow up to the MANOVA main effects, between subjects analyses were performed. Separate two-way ANOVAs were conducted for each dependent variable to examine the two main effects of the independent variables of CLASS and Tripod instructional quality.

The dependent variable student engagement was addressed in the first ANOVA. There was a significant main effect of CLASS instructional quality, F (1, 160) = 229.128, $p < .001$, $\eta 2 = 0.595$. High scores for CLASS instructional quality, as defined by any CLASS score greater than the median (Mdn = 112) score of the sample, resulted in a higher mean student engagement (M = 5.109) than those in the low score category (M = 2.776). The second dependent variable student achievement was next in the two-way ANOVA. There was a significant main effect of CLASS instructional quality, F (1, 160) = 6.295, $p = .013$, $\eta 2 = 0.039$. High scores for CLASS instructional quality resulted in a higher mean student achievement (M = 2.754) than those in the low score category (M = 2.230). The dependent variable student attendance was then examined with two-way ANOVA. The overall model was not found to be statistically significant, F (3, 160) = .640, $p = .640$. There was no significant main effect of CLASS instructional quality, F (1,156) = 1.521, $p = .219$, $\eta 2 = 0.010$. Table 13 depicts this information.

Table 13

Tests Of Significance Between CLASS Instructional Quality and Student Engagement, Achievement, and Attendance

Dependent Variable	F	P-Value	Partial Eta Squared
Student engagement	229.13	$p < .001$	.595
Student achievement	6.30	.013	.039
Student attendance	1.52	.219	.010

For student engagement, there was no significant main effect of Tripod instructional quality, F (1, 160) = .099, p = .754, $\eta 2$ = 0.001. For student achievement, there was a significant main effect of Tripod instructional quality, F (1, 160) = 11.779, p = .001, $\eta 2$ = 0.070. High scores for Tripod instructional quality resulted in a higher mean student achievement (M = 2.850) than those in the low score category (M = 2.134). For student attendance, there were no significant main effects Tripod instructional quality, F (1, 156) = .636, p = .425, $\eta 2$ = 0.004. Table 14 depicts this information.

Table 14

Tests Of Significance Between Tripod Instructional Quality and Student Engagement, Achievement, and Attendance

Dependent Variable	F	P-Value	Partial Eta Squared
Student engagement	.099	.574	.001
Student achievement	11.78	.001	.070
Student attendance	.636	.425	.004

Research Question 2

Multiple regression was performed to answer the second research question: Does gender moderate the association between instructional quality and each of the three outcome variables, student engagement, achievement and attendance? Three separate regression models were tested, one for each dependent variable. The first model tested the moderation effect of gender on instructional quality and student engagement:

*Student Engagement = Bo + B1CLASS Instructional Quality + B2Tripod Instructional Quality + B3Gender + B4CLASS Instructional Quality*Gender + B5Tripod Instructional Quality*Gender*

The overall model was found to be significant (F (5, 159) = 155.063, $p < .001$, R^2 = 0.829), explaining 82.9% of the variation in student engagement. CLASS instructional quality was found to statistically significant (t = 18.81, $p < .001$). However, there were no other statistically significant terms in the model ($p > .05$). Since the interaction terms were not statistically significant, gender does not moderate the association between instructional quality and student engagement. Tables 15 – 17 depict the results of this analysis.

Table 15

Model Summary For Instructional Quality, Gender, and Moderator Predicting Student Engagement

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.913	.834	.829	.61452	.262

Table 16

ANOVA For Instructional Quality, Gender, and Moderator Predicting Student Engagement

		Sum of Squares	df	Mean Square	F	Sig.
	Regression	292.788	5	58.558	155.063	.000
	Residual	58.156	154	.378		
	Total	350.944	159			

Table 17

Coefficients For Instructional Quality, Gender, and Moderator Predicting Student Engagement

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.600	.522		-3.067	.003
Gender	.027	.814	.009	.033	.974
CLASS Instructional Quality	.035	.002	.843	18.806	.000
Tripod Instructional Quality	.005	.003	.079	1.693	.093
ClassXGender	.006	.003	.252	1.854	.066
TripodXGender	-.004	.004	-.268	-.947	.345

The second model tested for a moderation effect between instructional quality and student achievement:

*Student Achievement = Bo + B1CLASS Instructional Quality + B2Tripod Instructional Quality + B3Gender + B4CLASS Instructional Quality*Gender + B5Tripod Instructional Quality*Gender*

The overall model was found to be significant, (F (5, 159) = 6.551, $p < .001$, R^2 = 0.149), explaining 14.9% of the variation in student achievement. Tripod instructional quality was found to be statistically significant (t = 3.713, $p < .001$). However, there were no other statistically significant terms in the model. Since the interaction terms were not statistically significant, gender does not moderate the association between instructional quality and student achievement. Tables 18 – 21 depict the results of this analysis.

Table 18

Model Summary For Instructional Quality and Gender Predicting Student Achievement

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.419	.175	.149	1.23641	2.175

Table 19

ANOVA For Instructional Quality, Gender, and Moderator Predicting Student Achievement

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	50.073	5	10.015	6.551	.000
	Residual	235.421	154	1.529		
	Total	285.494	159			

Table 20

Coefficients For Instructional Quality, Gender, and Moderator Predicting Student Achievement

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-2.373	1.050		-2.261	.025
Gender	2.357	1.637	.882	1.440	.152
CLASS Instructional Quality	.006	.004	.148	1.476	.142
Tripod Instructional Quality	.021	.006	.386	3.713	.000
ClassXGender	.007	.006	.375	1.235	.219
TripodXGender	-.016	.008	-1.206	-1.906	.058

Table 21

Model Summary For Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.187	.035	.003	1.092	1.875

The third model tested for a moderation effect between instructional quality and student attendance:

*Student Attendance = Bo + B1CLASS Instructional Quality + B2Tripod Instructional Quality + B3Gender + B4CLASS Instructional Quality*Gender + B5Tripod Instructional Quality*Gender*

The overall model only explained 0.3% of the variation in student attendance and was not statistically significant, F (5, 159) = 1.110, p = .357. None of the predictors in the model were found to be statistically significant. Since the interactions terms were not significant, gender does not moderate the association between instructional quality and student attendance. Tables 22 through 23 provide detailed information of the regression.

Table 22

ANOVA For Instructional Quality, Gender, and Moderator Predicting Student Attendance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.615	5	1.323	1.110	.357
Residual	183.578	154	1.192		
Total	190.194	159			

Table 23

Coefficients For Instructional Quality, Gender, and Moderator Predicting Student Attendance

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.384	.927		2.573	.011
Gender	-2.238	1.446	-1.026	-1.548	.124
CLASS Instructional Quality	-.004	.003	-.137	-1.270	.206
Tripod Instructional Quality	.001	.005	.014	.122	.903
ClassXGender	.007	.005	.424	1.293	.198
TripodXGender	.005	.007	.499	.729	.467

Summary

A two-way MANOVA was conducted to examine the relationship between instructional quality and each of the three outcome variables, student engagement, achievement, and attendance. There was no significant interaction effect between CLASS and Tripod instructional quality on the combined dependent variables. There were, however, main effects for CLASS instructional quality and Tripod instructional quality. High scores for CLASS instructional quality resulted in a higher mean student engagement score than those in the CLASS low score category. There were no significant differences in mean student engagement for the Tripod instructional quality groupings.

Both CLASS and Tripod groupings showed significant differences in student achievement. High scores for CLASS instructional quality resulted in a higher mean

student achievement than those in the low score category. High scores for Tripod instructional quality resulted in a higher mean student achievement than those in the low score category.

Neither CLASS nor Tripod groups showed significant differences in relation to student attendance.

Multiple regression was performed to answer this second research question:

RQ2. Does gender moderate the association between instructional quality and each of the three outcome variables, student engagement, achievement, and attendance?

The three regression models were tested to examine if gender moderated the relationships found in the previous analyses. Although instructional quality was found to be a significant predictor of student engagement and student achievement, neither gender nor the interaction terms were found to be statistically significant. Therefore, gender was not found to moderate the association between instructional quality and each of the three outcome variables, student engagement, achievement and attendance in this study.

Chapter 5 provides a review of the MANOVA, ANOVA and multiple regression results. I will discuss the interpretation of the findings, limitations, recommendation for future study, the implication of social change, finally, the chapter will conclude with a comprehensive summary of the study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to determine the relationship between two different measures of instructional quality and the outcomes of student engagement, achievement, and attendance among middle school students. Additionally, the study involved the examination of whether gender moderated relationships between variables. Because instructional strategies and approaches change from elementary school to middle school, I designed this study to improve understanding of the effects of instructional quality on student engagement, achievement, and attendance in middle school. The data analyzed were classroom observation and student surveys from a middle school campus with 11 math teachers and 160 sixth grade students. Analysis of the data led to rejecting some null hypotheses and accepting others.

A MANOVA, examining the relationship between instructional quality (CLASS and Tripod measures) and student outcome variables (student engagement, achievement, and attendance), found main effects for both CLASS and Tripod instructional quality, $F(3, 154) = 78.96$, $p < .001$ and $F(3, 154) = 3.957$, $p < .009$, respectively. Further examination showed a significant relationship between CLASS instructional quality and two student outcome variables: student engagement ($F = 229.13$) and student achievement ($F = 6.30$). *High* scores for CLASS instructional quality resulted in higher mean student engagement ($M = 5.109$) than those in the *low* score category ($M = 2.776$). *High* scores for CLASS instructional quality resulted in higher mean student achievement

(M = 2.754) than those in the , score category (M = 2.230). Similarly, Tripod instructional quality was significantly related to student achievement (F = 11.78), with high instructional quality associated with higher mean achievement scores (M = 2.850) than those in the low instructional quality category (M = 2.134). A third student outcome, attendance, was not significantly related to either measure of instructional quality. Further examination of the data revealed that gender did not moderate the above relationships identified between instructional quality and student outcomes.

Interpretation of Findings

The Relationships Between Instructional Quality and Student Outcomes

The study used two distinct measures to assess instructional quality and the relationship between student engagement, achievement, and attendance: the CLASS observation tool and the Tripod Student Survey. Study results with CLASS scores as the independent variable supported two alternative hypotheses and showed significant effects with higher mean student scores of student engagement and student achievement associated with high instructional quality than associated with low instructional quality. Study results using Tripod scores as the independent variable supported one alternative hypothesis and showed that high Tripod scores of instructional quality were significantly related to higher mean scores on student achievement. Student engagement scores were not significantly related to Tripod scores. The results support the literature indicating that the quality of instruction can affect student outcomes. Bronfenbrenner's (1989) work provided the theoretical framework of this study and the belief that the classroom

environment can affect students' ability to remain focused on learning. In addition, Vygotsky's (1978) conceptual framework indicated that children build knowledge when they interact with peers, as well as that the connection between people and social factors of shared experiences can increase learning. In accordance with the ZPD, instruction and assistance from a teacher (the more knowledgeable other) can help students learn more than they could learn alone (Vygotsky, 1978). The literature suggests environmental factors such as teacher and student interaction, both within and outside the classroom, are part of students' educational structure and can affect student learning (Allen et al., 2013; Bronfenbrenner, 1989; Grossman et al., 2010). Understanding the effects of teacher and student interactions is important.to the field of education. Research conducted by Hanushek & Rivkin (2012) showed that students exposed to 2 consecutive years of low-quality instruction struggle to recover lost ground. Teachers play a key role in student achievement (Goe & Stickler, 2008) through their interactions with students and delivery of instruction. The instructional approaches teachers use contribute to student learning; thus, the quality of instruction is important. Study results validated earlier research addressed in Chapter 2 that indicated instructional quality has an association with student engagement and achievement.

Interestingly, CLASS and Tripod scores yielded different results with regard to student engagement, possibly because the instruments measured the same variable but with two different tools. There are a few ways to consider the differing results between instruments. First, the CLASS tool relies on an assessor's observations of the classroom,

rating the instructor's nonverbal expressions of feelings, interactions with students, and quality of instruction (Kawulich, 2005; Schmuck, 1997). The CLASS instrument included measures of classroom organization, instructional support, and emotional support, including teachers' nonverbal expressions of feelings and instructional practices and interactions with students (Pianta et al, 2002; Pianta et al., 2008). In contrast, the Tripod instrument focused on student perceptions of the teacher's pedagogic skills, content knowledge, and relationship-building skills (Ferguson, 2012). The different methods of expert, but objective, observers versus student perceptions could have affected how the measures were related to student engagement because students might perceive other factors besides nonverbal expressions of feelings and teacher interactions as more important to their sense of engagement. Effective instruction and rich learning environments have been shown directly to influence student engagement and achievement; hence, the quality of instruction becomes more important (Allen et al., 2011; Chait 2009; Glazerman et al., 2010; Marks, 2000; Miller & Chait, 2008) and to indirectly affect attendance (Archambault et al., 2009).

Neither the CLASS nor the Tripod measures of instructional quality were related to attendance; the null hypothesis was not rejected. The data indicated a truncated range of scores for attendance, with a range of scores from 0-4 absences. The possible range for the attendance variable was 0-45 days; however, the median score for the sample was 2.0 with a mean of 1.79 and a standard deviation of 1.10, thus indicating a truncated, or restricted, range. A dependent variable with a truncated range would result in a reduced

correlation between it and the independent variable, leading to a higher likelihood of Type II error (Vaci, Gula, Bilalić, 2014). The truncated range for the attendance variable could explain the discrepancy between what was found in the literature examining instructional quality and attendance (Cohen, Cohen, West, & Aiken, 1983). Current study results indicated no significant effects between instructional quality and attendance.

Administrative rules require students to attend school a certain number of days, which likely led to the restricted range of absences. Research findings were not entirely aligned with what I predicted based on previous literature and the theoretical framework. Bronfenbrenner's (1998) ESM asserted that teacher and student relationships are reciprocal and students' individual growth, characteristics, and instructional interest could be contingent upon the quality of instruction, which could influence the student-teacher relationship and developmental outcomes (Dotter & Lowe, 2011). The interrelationships teachers and students develop could enhance students' comfort level within the instructional environment, and students may become open to learning. As Ferguson (2012), Pianta, et al. (2002), and Pianta et al. (2008) indicated, teachers could influence the quality of the student-teacher relationship by providing students with effective instruction, care, emotional support, and instructional support. The literature relates to the interrelationships between teachers and student's attendance showed connection to student's interests in school and is usually contingent upon what students are interested in learning. When instruction is not interesting to students, they may not attend school.

The findings of the present study support Vygotsky's (1978) theory about the effect of social experience on increased learning. The present study indicated that instructional quality might lead to higher student achievement and engagement levels. In addition, SDT would also predict that the quality of instruction, which is one type of instructional support, would be related to student behavior and learning (Vygotsky, 1978). The findings of the present study provided partial support for this theory because, although a relationship was found between instructional quality and student achievement and engagement, the predicted relationship with attendance was not supported.

Why Gender Was Not A Moderating Variable

Contrary to my prediction, gender was not a moderating variable in the present study. The study design and demographic distribution could have made gender differences less obvious for middle school students. Convenience sampling was used, and the sample was not varied enough. As such, further research is needed on the role of gender. In addition, variance in the comfort level of boys' and girls' participation in class and differences in the way students learn could have influenced gender as a moderating variable. Previous literature provides evidence of behavior and cognition varying by gender, which can result in a need for different learning approaches for male and female students (Kovalik, 2008; Neu & Weinfeld, 2007). ESM supported gender as a moderating variable because the self-motivating system within ESM meant that, usually, individuals could adjust to internal motivation and beliefs (Bronfenbrenner, 1989). Bronfenbrenner asserted that differences in gender roles according to one's culture could

result in different responsibilities, opportunities, needs, and constraints not just for adult men and women, but also for boys and girls. Based on a growing body of evidence, gender inherently affects engagement, achievement, and attendance and may therefore moderate the effects of instructional quality on these student outcomes (Archambault et al., 2009; Dotterer & Lowe, 2011; Fredricks et al., 2011; Goe & Stickler, 2008). The findings of the present study demonstrated that gender was not correlated to the variables in the sample. The results do not invalidate the conclusions of previous scholars, but rather demonstrate a need for future research.

Limitations of the Study

Several limitations to this study affect the validity and reliability of the findings and indicate the need for more research. This study was limited to sixth-grade math teachers and sixth-grade students. This study could benefit by increasing the number of participating teachers and students. In particular, I collected the data only once, instead of using repeated measure design. Additional research could provide additional details on the relationship between instructional quality and student outcomes. Another limitation I faced was collecting a sufficient amount of data to ensure adequate variance in attendance scores. Instruments used, measured instructional quality that was more sensitive to the relationship between instructional quality and engagement. Additionally, I obtained the sample from a student and teacher population of one school system only, which limits the generalizability of the findings to other schools in the school district or beyond. Convenience sampling method was used and may limit generalization of the

sample. Although findings from the study may not be a representative of all school districts in a low-income population, the study could be carried to urban school districts. Another limitation linked to the study sample may be connected to the school district's having good teachers with high instructional quality. Teachers with high instructional quality may not struggle with engagement and achievement. Therefore, no effects of attendance were evident. Not having a broad range of teachers limited the access to less qualified teachers and no gender effects were shown to be significant.

The final limitation is linked to time constraints. Time constraints affected the ability to use repeated measures or a longitudinal approach to assess improvements. I considered posttest data collection as appropriate because the data tools were sufficiently robust for a single data collection; however, using repeated measures or longitudinal approaches could provide valuable insights into student outcomes.

Recommendations for Further Study

This study was limited to sixth-grade math teachers and sixth-grade students. This study could have benefited from a broader sample of teachers and students. Conducting a larger study that includes sixth-, seventh-, and eighth-grade teachers would help gain a better understanding of the relationship between instructional quality and student outcomes across all middle school grades. Future research could also include a study that investigates the quality of instruction among male and female teachers and the effect it has on students' engagement, achievement, and attendance.

Future research could also address the disclosed limitations of this study. These limitations are linked to how data were collected and the kinds of data collected. In particular, I collected data only once, instead of using a repeated measures design to examine changes over time. A cross-validation model could be conducted to gather data on instructional quality using Tripod survey, so data gathered are based on students' perceptions. Teachers are provided professional development on instructional quality in the cross-validation model.

Collecting enough data to ensure sufficient variance in scores was another limitation of the study. Although two different instruments were used in this study, specifically (a) a teacher observation tool to measure instructional quality and (b) a student survey to measure instructional quality and student engagement, the results showed that one was more sensitive than the other. Future researchers could choose one of the two instruments and test it on a more robust sample or longer period, and the findings would probably be more conclusive. I collected data from direct observations and indirect measures from student surveys using only a small sample of aggregated classroom data to generate the mean sample. I would have double checked measurement tools for measuring engagement to align the measures more closely. Future researchers could address these limitations.

One more recommendation for future researchers is to use a qualitative method to understand how instructional quality affects engagement, achievement, and attendance. Qualitative studies, by their nature, allow for a more in-depth portrait of the experiences

of specific subjects (Creswell, 2003). Future researchers could use a qualitative design to gain valuable insights into the relationships between different aspects of teacher practice and student outcomes based on perceived instructional quality. Concepts of interest could include instructional practices, student motivation, and engagement.

Implications for Social Change

Middle school can be challenging for some students. Negative gaps in outcomes, student engagement, and attendance are present among male and female students (Archambault et al., 2009; Desy et al., 2011; Rimm-Kaufman et al., 2015; Robinson & Lubienski, 2011). Improving academic success has been the goal for school administrators, teachers, and legislators (Kaga et al., 2008). According to Kane et al., (2010, 2014) and Rivkin et al., (2005), some teachers produce students who seek higher grades than other students, which are usually from high instructional quality classrooms. Results such as these have prompted additional research interest. Findings of the present study provided additional evidence supporting the role of instructional quality in enhancing student outcomes. The results from this study may affect social change among many schools across the nation by expanding legislators' and school administrators' understanding of the importance of instructional quality, as the results may affect student achievement and engagement. Because the Tripod tool did not show instructional quality as being connected to achievement and engagement, in contrast to the CLASS tool, there is a need to understand whether students' perspectives of achievement and engagement

are different from instructional practices or from how achievement and engagement levels are usually measured.

One primary implication of this study indicates that study findings could serve as valuable data to school administrators about student engagement and achievement, particularly that males and females could benefit equally from instructional quality. Gender does not moderate the relationship between instructional quality and outcomes of engagement, achievement, and even attendance, therefore, results could be deduced that one's gender may not govern perceptions about the instructional quality and learning involvement and motivation but specific learner characteristics and study habits. These factors and characteristics, however, may not be on the list of changes for those in the field of education.

Another implication is that even though the data using the Tripod survey did not reveal a significant relationship between instructional quality and engagement, achievement, and attendance, the CLASS data did, at least for the two variables of engagement and achievement. Instructors and administrators could ensure the quality of lessons being delivered are of high quality. The CLASS tool is a validated tool that evaluates overall teacher-child relationships, classroom environments, and teaching practices in the early childhood educational environments. CLASS is an active system for observing and assessing emotional and instructional elements of quality educational environments, so with the findings revealing a significant relationship between instructional quality and student outcomes, teachers and administrators should be more

mindful. Administrators could put into place more professional development programs for teachers to improve how they handle their interactions with the students, how they facilitate trusting relationships with their students, and how they teach. Educators could create more training programs to ensure that teachers are responsive to students at all times and never dismissive. Students' perspectives can sometimes be so different from how teachers perceive the quality of their instruction, or even the data produced by the systemic observation that the CLASS instrument allows, so teachers and administrators should be aware.

The findings of the study imply that teachers and schools may benefit from being more focused on improving the quality of instruction beyond teaching students to reach certain scores on standardized tests, because the quality of instruction could affect the very factors pushing students to stay in school, such as their engagement levels. In the United States today, there are an increasing number of teachers teaching to meet state standards, and ensuring students are striving towards higher scores on standardized tests of academic skills (Elmore & Huebner, 2010). The goal of high achievement is even prevalent in most teacher professional development programs and has been used as a primary gauge of teacher productivity. The focus on educator accountability can affect the quality of relationships teachers have with their students, thereby affecting how they perform or behave in class. Students also want to feel like they are being shaped or molded into individuals with proper critical thinking skills and being taught not just to pass tests but being developed to engage critically as parents, citizens, economic actors,

and more importantly, as humans. For students to be more engaged in class because they feel the desire to could be a goal for teachers, apart from being high achievers.

The present study produced findings on the influence of instructional quality on achievement and engagement, based on nonverbal expressions of feelings, interaction, and quality of instruction through direct experiment observation as measured by the CLASS approach. Engagement in middle school can be challenging for some students. Negative gaps in outcomes, student engagement, and attendance are present among male and female students (Archambault et al., 2009; Desy et al., 2011; Rimm-Kaufman et al., 2015; Robinson & Lubienski, 2011). Improving academic success has been the goal for school administrators, teachers, and legislators (Kaga et al., 2008). This study adds to the contribution of research because the literature demonstrated the importance of viewing instructional quality from a holistic research view. The results of this study indicate that there is a significant statistical connection between instructional quality and the relationship between student engagement, achievement, and attendance. Results could be shared with school districts, and additional research could be done with three data time points, which would improve the statistical significance for all of the variables. Another recommendation includes increasing the number of instructional observations.

The recent trend of measuring instructional quality in middle school has shown that schools have been slow to implement an observation approach to measure instructional quality. With the findings of the study using the CLASS survey (an observational approach to understanding instructional quality) revealing the quality of

instruction being significant to affect student outcomes, it cannot be emphasized enough how important it is for policymakers to focus on education quality at the middle school level.

Conclusion

Investigating instructional quality, student engagement, achievement, and attendance, and the moderation of gender is needed and cannot be ignored. School administrators and legislators could continue to use data to make appropriate decisions on instruction and engagement to increase outcomes and attendance. Teachers are leaders and have the power to diminish or enhance the ability of students to learn. Due to the increased changes in state standards, there is a great need to address instructional quality, especially when research findings demonstrate that 99% of teachers observed by principals and instructional staff scored above average on implementing instructional quality, yet 25% of students did not meet academic standards (Glazerman et al., 2010). Middle school can be a challenging time for students, and quality teaching practices could be consistent because of the connection it has to student's engagement, achievement, and attendance. Continuing to educate school leaders and educators is important and should not diminish because of school funding. Utilizing data on instruction is valuable to improving student outcomes. Continued research is needed.

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