The Impact of Teacher Gender on Elementary Students' Academic Performance

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Abstract

The purpose of this study was to explore the impact teacher gender had on third and fifth grade students' academic performance and attendance. Archival data were collected from the Student Information System (SIS) used by District X, a suburban district located in the Midwest. Students in District X take the STAR assessment in reading and mathematics each fall and spring. The STAR assessment is a computer adaptive test, which changes the level of difficulty based on student response. Correctly answering questions increases the difficulty level of content matter, which ultimately results in a higher score for the student (Renaissance Learning, 2014). Students of male teachers did not show statistically significant academic growth regardless of student gender. Female students taught by female teachers showed marginally significant growth in reading when compared to male students of female teachers. Teacher gender did not make a statistically significant difference in student academic growth in mathematics for either gender. Students from various socioeconomic backgrounds also did not show a statistically significant difference in academic growth when placed with a male teacher versus a female teacher. Finally, attendance of students was not impacted by the gender of the teacher. Prior to this study, the majority of research studies related to teacher gender focused on male teachers as role models. The present study utilizes a quantitative approach to analyze test scores and attendance of students. Although results indicated teacher gender did impact academic growth in reading, future researchers should exercise caution when reviewing this study because of the small sample of teachers available.

Dedication

I would like to dedicate this dissertation to the following people. First and foremost, I would like to dedicate this dissertation to my family. Thank you to my wife, Raelynne Winkelmann. Throughout my doctoral journey, you have been my lifeline. As I have worked through the coursework and dissertation process, you have helped me to maintain a sense of balance. Your understanding, patience, and encouragement have again proven you are the best choice I have ever made. I am grateful for our beautiful daughter, Kinley. Kinley– I hope you understand the importance of family and education. These are two of the most important things in life and I look forward to watching you grow.

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Chapter One

Introduction

"The lack of male teachers in primary schools has been closely aligned with another commonsense truth: boys are the new disadvantaged in schools" (Mills, Haase, & Charlton, 2008). Elementary education is a profession dominated by females. Weaver-Hightower (2011) stated "countries worldwide have seen crisis discourses over small numbers of male teachers" (p. 97). According to the Bureau of Labor Statistics (BLS) (2013), women made up 81% of the elementary and middle school teacher population while men composed just 19% of the elementary and middle school teacher population in 2013. McGrath and Sinclair (2013) noted the discrepancy between the number of male and female teachers and called for more males to choose education as a career after analyzing the impact of males as teachers.

Men are often discouraged from choosing education as a profession. Weaver-Hightower (2011) called for a wide variety of stakeholders to examine "subtle and explicit biases that discourage male teachers" (p. 113). Similarly, Tucker (2015) urged these stakeholders to provide "more support to transform the school environments in which they teach" (p. 7). Although men are the minority in most schools, they still have an impact on students and schools (McGrath & Sinclair, 2013).

Background

A discrepancy has existed between the number of female and male teachers at the elementary level. Historically, females have dominated the profession of teaching at the elementary and high school levels (BLS, 2013). However, a common theme in literature related to teacher gender has been the call for more male teachers at the elementary level.

For example, McGrath and Sinclair (2013) conducted a perceptual survey of 184 students and 97 parents. The survey asked students and parents to answer questions based on their experience with male teachers in the elementary classroom. Based on the findings from McGrath and Sinclair's (2013) research, students and parents believed men are "good role models" (p. 538) for the male and female students. Additionally, other researchers (Cushman, 2008; Gibbs, 2012; Gosse, 2011; Martin & Harsh, 2005) found that students, teachers, parents, and community members want more male teachers at the elementary level. However, certain factors discourage men from entering the education profession, including biases toward male teachers (Jones, 2007; Weaver-Hightower, 2011) and teacher salary (Berry, 1986).

Initiatives have been put in place to recruit more males into the elementary teaching profession. MenTeach is an organization that recruits and educates college males into the field of education. The organization maintains a website dedicated to providing education, literature, and forums for men interested in teaching. Although research studies (Cooney & Bittner, 2001; Gosse, 2011; McGrath & Sinclair, 2013) have been dedicated to the perceptions of the public on males in the elementary classroom, research is limited on the academic impact of male teachers at the elementary level. Furthermore, research on the impact of teacher gender on student attendance is lacking.

District X is a public school district that educates the students of a Midwestern suburb. The Department of Elementary and Secondary Education (DESE, 2016a) stated the K-12 enrollment at District X was 4,688 and included nine schools. Table 1 shows the socioeconomic status, as measured by free and reduced lunch status, and enrollment for the six elementary schools located in District X during the 2014-2015 school year.

Table 1

Elementary School Socioeconomic Demographics in District X in 2015

School Name	Eligible for Free/Reduced Lunch	Enrollment
School A	56.1%	313
School B	47.9%	331
School C	69.1%	307
School D	47.3%	570
School E	51.6%	752
School F	57.8%	349

Note. Adapted from "District demographic data," DESE, 2016 (https://mcds.dese.mo.gov/guidedinquiry/District%20and%20Building%20Student%20Indicators/District%20Demographic%20Data.aspx)

For this study, classrooms in grades three and five were analyzed. School C and School E were the only two schools that had male teachers in one of these grade levels during the 2015 school year.

Statement of the Problem

According to the BLS (2013), the public education system is one of the largest employers in the United States. The system employed 2.8 million teachers in grades kindergarten through eighth in 2013. However, only 18.6% of the teaching population was male. This number is low and confirms what "researchers have long noted that male teachers are severely underrepresented in elementary school classrooms" (Malaby & Ramsey, 2010/2011, p. 2).

Research has been conducted that demonstrates the positive impact a male teacher can have on students (McGrath & Sinclair, 2013; Mills, Haase, & Charlton, 2008). These studies call for more males to enter elementary education as a career because men are seen as positive role models. Researchers (Cushman, 2008; Dee, 2006; Gibbs, 2012;

Tucker, 2015) have found many schools are calling for more male teachers. Cushman (2008) called for more male teachers in primary schools because "young children, especially boys, need 'male role models' in their lives" (p. 123). Cushman (2008) highlighted the imbalance between the number of female and male teachers at the elementary level. As the schools are calling for more male teachers at the elementary level, the actual number remains stagnant (BLS, 2014).

There are theories about the reasons for a lack of male teachers at the elementary level. One theory is men are deterred, in general, from entering education as a profession. Weaver-Hightower (2011) found men were discouraged from teaching as a profession. The discouragement has come from peers and family members through "gendered teasing about the ease of and 'cuteness' required in education coursework, gendered objections to 'wasting' their ability, and gendered suspicions of sexual predation" (Weaver-Hightower, 2011, p. 97). Teasing and suspicions have resulted in male undergraduate students pursuing different degrees during college.

Few quantitative studies have been conducted that link teacher gender to academic achievement and attendance in the classroom. The literature and research has not focused on a relationship between student demographics and the impact of teacher gender on academic achievement. Additionally, the literature and research has not focused on the relationship between teacher gender and attendance.

Purpose Statement

The primary purpose of this study was to determine the extent there was a difference in academic growth between students in upper elementary classrooms with male teachers and students in upper elementary classrooms with female teachers.

Specifically, the researcher looked at language arts and mathematics growth for students throughout one school year. A second purpose of this study was to determine the extent there was a difference in academic growth between female and male students. A third purpose of the study was to determine the extent student gender and SES impacted differences in academic growth between students in classrooms with male teachers and students in classrooms with female teachers. A final purpose of the study was to determine the extent there was a difference in attendance between students when paired with a male teacher and students when paired with a female teacher.

Significance of the Study

The vast majority of educators at the elementary level are female (BLS, 2013). While studies (Petersen, 2014; Porter, 2008; Saban, 2003) have been conducted that demonstrate gender differences and workplace expectations for male and female educators, few have quantified the impact of teacher gender on student academic growth and student attendance throughout the school year. This study contributes to the body of knowledge by helping to fill this gap in research and literature. Administrators, teachers, and students could benefit from this research. With a better understanding of the impact teacher gender has on an elementary student's academic growth, administrators could be able to strategically place students in various classrooms according to student gender, teacher gender, and student SES. This research could benefit administrators, teachers, and students by providing a better understanding of varying student attendance in classrooms taught by a male or female teacher. If attendance rates are also impacted by teacher gender, strategically placing students into classrooms led by teachers of a certain

gender could increase student attendance. With increased attendance, student achievement could increase (Daugherty, 2008).

Delimitations

"Delimitations are self-imposed boundaries set by the researcher on the purpose and scope of the study" (Lunenberg & Irby, 2008, p. 134). The following delimitations were placed on this study:

- All participants attended two elementary schools in the District X.
- Only students in attendance for a full year were used in the study.
- Data collection included information from the 2015-2016 school year. Only language arts and mathematics scores were used.
- Attendance was tracked on a daily basis and recorded in the School Information System (SIS).

Assumptions

According to Lunenburg and Irby (2008), "Assumptions are postulates, premises, and propositions that are accepted as operational for purposes of the research" (p. 135). Assumptions are factors within the study that the researcher does not have control over. In the present research, the following assumptions were made:

- All students put forth their best effort on the assessments.
- Regardless of gender, all teachers were highly qualified, effective teachers.
- Students were identified in the correct demographic group.
- Attendance was recorded in SIS with fidelity.

Research Questions

Research questions give the study direction and contain the essence of the study for those who review them (Lunenburg & Irby, 2008). The following research questions were used to guide this study:

RQ1. To what extent is there a difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers?

RQ2. To what extent is the difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student gender?

RQ3. To what extent is the difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student socioeconomic status?

RQ4. To what extent is there a difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers?

RQ5. To what extent is the difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled

score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers affected by student gender?

RQ6. To what extent is the difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers affected by student socioeconomic status?

RQ7. To what extent is there a difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers?

RQ8. To what extent is the difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student gender?

RQ9. To what extent is the difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student socioeconomic status?

Definition of Terms

This section of the research is dedicated to key terms that were used throughout the study.

Attendance. Student attendance is required for all children under the age of 17 in the state of Missouri (DESE, 2016b). Attendance is tracked in the District X through School Information Systems (SIS). Attendance percentages in SIS reflect the total number of hours a student is present throughout the 2015-2016 school year.

Scaled Score. Students receive a scaled score for the STAR Reading and STAR Mathematics assessments.

> A scaled score is calculated based on the difficulty of questions and the number of correct responses. Because the same range is used for all students, scaled scores can be used to compare student performance across grade levels. STAR Reading Scaled scores range from 0 to 1400. All norm-referenced scores are derived from the scaled score. (Renaissance Learning, 2015a, p. 1)

School Information Systems (SIS). An online information management system that tracks socioeconomic status and attendance. District X utilizes Tyler Information Systems to store SIS data (Tyler Technologies, 2016).

Socioeconomic Status (SES). The Department of Education in the state of Missouri classifies all students into three socioeconomic classes based on lunch status. These classes include free lunch, reduced lunch, and standard lunch pricing. The lunch status is based on the income level of the family (U.S. Department of Labor, 2016).

STAR Reading and Mathematics Assessment. STAR Reading and Mathematics assessments are computer adaptive tests created by Renaissance Learning that measure reading comprehension and mathematical skills (Renaissance Learning, 2014).

Organization of the Study

This study is organized into five chapters. Chapter one provided an introduction of the study, needed background, statement of the problem, and the purpose statement. Chapter one then identifies the significance of the study, the delimitations, the assumptions, and the research questions. Chapter one concludes with the definition of

terms and the overview of methodology. Chapter two provides an overview of related literature including the impact of teacher gender on academic growth based on student gender and student socioeconomic status, and student attendance. Chapter three provides a detailed view of the research design used including the selection of participants, measurement, and data collection procedures with research questions, hypotheses, and statistical analyses explanations. Chapter three concludes with limitations to the study. Chapter four presents the results of the present study. The final chapter, five, summarizes the present study and provides an overview of the problem, presents the purpose statements and research questions, reviews the methodology used, and reports major findings. Additionally, any implications for action and recommendations for future research are considered in chapter five.

Chapter Two

Review of the Literature

"The perceived need for more male primary-school teachers has emerged as an international issue with research and media reporting proportional and absolute decline in the number of male primary-school teachers" (McGrath & Sinclair, 2013). Studies have been conducted on the qualitative benefits of male teachers being in the elementary classroom (Martin & Harsh, 2005; McGrath & Sinclair, 2013). However, research that analyze the relationship between teacher gender and student achievement are limited. The history of education is discussed with an in-depth look at teaching as a profession. In addition, academic discrepancies between male and female students is discussed. Chapter two then discusses literature related to the impact of teacher on student achievement. The chapter concludes with instructional style of teachers, socioeconomic status of students, and how attendance impacts student achievement.

History of Education and Teaching

The early establishment of public schools in the United States of America is well documented in a book entitled *A History of Education in the United States*, which was published in 1904 by Dr. Edwin Grant Dexter of the University of Illinois. This book provides an exhaustive look at the history of education in the pre-1900s United States. *A History of Education in the United States* (Dexter, 1904) started with an overview of several attempts to build schools in the early 1600s. Many of these attempts failed due to a variety of reasons, including conflicts with Native Americans and lack of support from citizens. During this time of "distress, legislative mandates called for families to educate their youth in the home" (Dexter, 1904, p. 8). Successful attempts of establishing schools

came to fruition in the mid 1600s. Many of the teachers and school headmasters were males with educational backgrounds (Dexter, 1904). Dexter (1904) stated "in the earlier colonial days grammar-school teachers were almost universally college men" (p. 371). Interestingly, school teachers were also ministers of local towns and therefore, revered by communities.

After an exhaustive review of school establishments throughout the 1600s, Dexter then spoke of the development of school systems in each state. Throughout his review of school establishments, Dexter frequently mentioned teacher gender trends that occurred at various times throughout history. At the time of Dexter's publication, the United States consisted of 45 states. Oklahoma, New Mexico, Arizona, Alaska, and Hawaii joined the United States post-publication (Kelly, 2015).

Dexter (1904) then elaborated on the establishment of post-secondary education, including colleges, technical schools, and professional education. Colleges, technical schools, and professional education opportunities came to fruition and focused on the fields of science, technology, and electricity. With the increased availability of electricity in the 1800s, colleges sought to prepare young people for careers in these areas.

The population of the United States continued to increase during the 17th and 18th centuries. During the 19th century, schools were becoming more systematic (Ravitch, 2003). Since the school populations were growing, the call for more teachers also increased. During this time, the teaching population shifted from predominantly male to predominantly female (Ravitch, 2003).

To meet the increased demand for teachers, some colleges began developing teacher preparation classes. These classes date back to the early 1800s. Ravitch (2003)

stated “new teachers had to persuade a local school board of their moral character, and in some districts, pass a test of their general knowledge” (para. 6). Different communities had various criteria for hiring teachers.

As the United States moved forward toward the 20th century, a more systematic process for teacher training was developed. Ravitch (2003) stated this “was a time in which relatively small departments of pedagogy expanded into undergraduate and graduate schools of education” (para. 10). In the early 20th Century, the Department of Education transformed formal teacher training (Ravitch, 2003). Additionally, teaching was still predominantly female.

The United States continued to grow during the early 20th century. From 1900-1930, the number of children between the ages of 5-14 grew by 8 million (U.S. Census Bureau, 1999). With this rise in population, the demand for qualified teachers also grew. During this time the Federal government mandated that all states require children to attend school, although the government allowed states to decide on the ranges of ages to be in school. Chicosky (2015) stated that “by 1918, all states had compulsory education statutes” (p. 16). With this large population of students, the demand for teachers continued to increase. During this time, the teaching profession was predominantly female. This disparity continued throughout the 20th century. The National Education Association (2014) found that males made up 23% of United States public school teachers in 2013. Even though this is a 7% increase from 2011 there has continued to be a significant gap between male and female teachers.

Gender Differences in the Teaching Profession

Since the 1980s, the disparity between the number of male and female teachers has continued to grow. Figure 1 shows the disparity in the number of female teachers and male teachers in 1986 was just 38%. By 2011, the gap had increased to 68%.

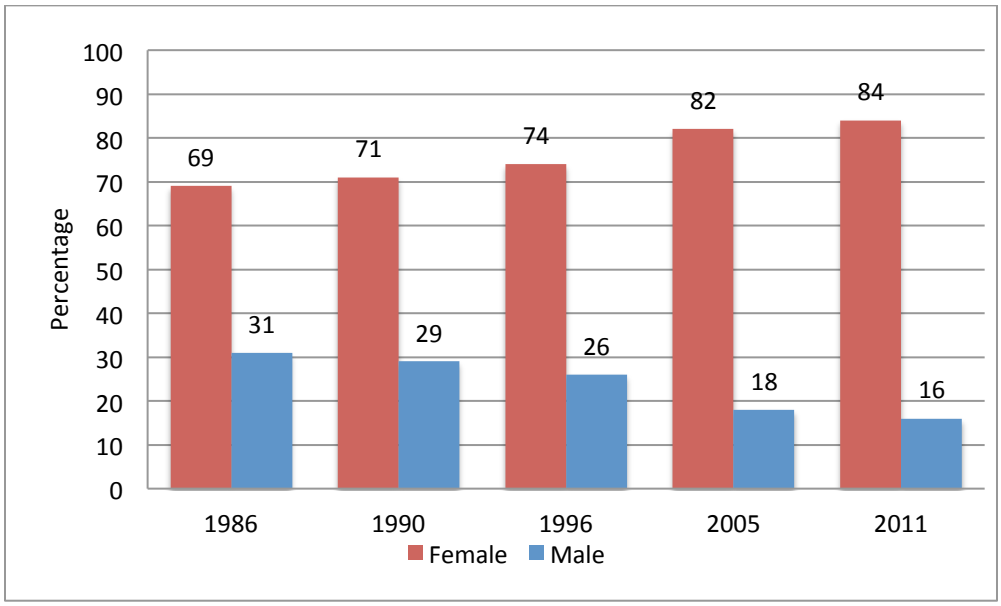

Figure 1. Elementary and secondary school teachers by sex: 1986-2011

According to the BLS (2014), the job outlook for elementary teachers is expected to grow by 12% between 2012 and 2022. This rate of growth is considered faster than average when compared to all other professions (BLS, 2014). The average growth expectation for all occupations is 6% (BLS, 2014). Therefore, the call for more teachers will continue into the foreseeable future (BLS, 2014). However, college students turn away from teaching as a profession for a variety of reasons. One reason is teacher salary (Berry, 1986).

Teacher salary is frequently mentioned in mainstream media and literature. Starr (2015) synthesized information from the 47th Annual Phi Delta Kappan Gallup Poll, which surveyed 3,499 Americans 18 years of age and older via the web in May 2015.

The survey also included an additional 1001 individuals surveyed via telephone. The survey asked respondents questions that pertain to public education. After organizing the findings, one key point discovered was that "teacher salaries in their community are too low, according to a majority of Americans" (Starr, 2015, p. 52). The NEA found that salary has an impact on the percentage of teachers that are male. According to the 2006 NEA survey, "states with the highest salaries had the highest percentage of male teachers" (Cleaver, 2010).

When choosing a career, (Skelton, 2003; Weaver-Hightower, 2014) men were deterred from entering education for a variety of reasons. Skelton (2003) surveyed college students that were enrolled in teacher preparation courses across 20 different colleges. These surveys asked for anecdotal feedback from male and female teaching candidates. One of the themes that emerged was that teaching, specifically at the elementary level, is viewed as feminine. One candidate stated "the majority of men that I know have gone into secondary teaching because that seems to be the thing to do. If you want to be a teacher- and you are male- secondary teaching is more acceptable" (p.198). Weaver-Hightower (2014) found men were discouraged from teaching by peers and family members. Weaver-Hightower (2014) interviewed and observed three male teachers from the southern United States in 2014. Throughout Weaver-Hightower's (2014) study, the male teachers spoke about their attitudes towards teaching as a profession and the negative connotation that peers and relatives have on their career choice as teachers. Male teachers often receive criticism for their career choice when in social situations (Weaver-Hightower, 2014).

Similarly, Jones (2007) found some societal views regarding male preservice teachers have a negative connotation. Jones (2007) conducted a small scale research project in which she interviewed 18 male preservice teachers from a university. The university had a partnership with a local school district. The researcher also interviewed 12 female teachers that worked at the school and had experience working with male preservice teachers. After conducting interviews amongst the male preservice teachers and female teachers, several themes emerged. The first theme was the societal view that male preservice teachers are not "real men." Another societal view is that male preservice teachers could be sexual predators.

Additionally, male teacher candidates have often been compared to female teacher candidates. Saban (2003) conducted a study using a survey that consisted of fixed-response and open-ended questions. Saban (2003) sent the survey to 381 prospective classroom teachers enrolled in a college program during the 2001-2002 academic year. After analyzing the results, Saban (2003) found female teachers at the elementary level were more enthusiastic about and committed to teaching than their male counterparts. Hussain, Ali, Khan, Ramzan, and Qadeer (2011) found that teacher attitude towards the teaching profession impacts student performance. Hussain et al. (2011) stated the following:

> Female elementary school teachers have a more positive attitude towards the profession as compared to the male secondary school teachers. This may be the result of the stereotyping belief that teaching is a feminine job. Female teachers might feel the job is more appropriate for them. (p. 989)

However, males enter the teaching profession for a variety of reasons. Dundar (2010) conducted a study of 176 male and female teaching candidates. A survey was disseminated to the candidates to identify factors that influenced the choice of choosing teaching as a profession. Using an analysis of variance (ANOVA), Dundar (2010) compared responses between female and male teacher candidates. Dundar (2010) found male teacher candidates involved in the study chose teaching as a fallback career. Additionally, male teacher candidates involved in the study reported the difficulty of teaching is significantly less than the female teaching candidates.

Positive societal views can also encourage male preservice teachers to enter the elementary teaching profession. Cooney and Bittner (2001) conducted four one-hour conversations amongst male students, male teachers, and male professors at a United States university. Cooney and Bittner (2001) found that preservice teachers see themselves as being good role models for young students. Even though these preservice teachers recognized they are entering into a predominantly female profession, the males viewed themselves as father figures to those students without a positive male role model.

Malaby and Ramsey (2010/2011) conducted a study on the choice male preservice teachers made to pursue a career in elementary education. Through interviews, Malaby and Ramsey (2010/2011) found the "participants indicated an embracing of the nurturing, supporting aspects of being a role model or father figure in a school while resisting categorization as either strongly feminine or masculine" (p. 10).

Furthermore, Petersen (2014) conducted a study that included approximately 230 students that were in the first year of a four-year Bachelor of Education program. Students in this program were asked two questions. The first question asked the students

to write down views of males in elementary education. The second question asked students to talk about what the community says about males in the teaching profession. After analyzing the responses, Petersen (2014) concluded society views males as good role models at the elementary level. Additionally, male teachers at the elementary level were viewed as having a strict classroom management style, thus providing a structured learning environment. Another positive societal view, as described by Petersen (2014), is the issue of security. By having a male at school, there seems to be a "greater sense of security" (Petersen, 2014, p. 6).

Gosse (2011) researched the demand for more males in elementary education. Gosse (2011) developed a survey that was sent to male elementary teachers. The questions included "social, political, institutional, and structural variables that influence male teachers' decision to enter, remain in, and/or leave teaching" (Gosse, 2011, p. 120). Gosse (2011) sent this survey to several hundred male elementary teachers in Canada. Two hundred and twenty-three responses were returned. Gosse (2011) found male elementary teachers act as positive role models not just for boys but for girls as well.

Similarly, McGrath and Sinclair (2013) conducted a perceptual study of males already in the teaching profession by surveying 97 parents and 184 sixth-grade students. Through the use of a survey, the researchers aimed to identify any themes that developed. One theme found at the conclusion of the study was the desire to see an increase in the number of male teachers.

Regardless of the reason men enter teaching, a discrepancy still existed between the number of males and females. Cunningham and Watson (2002) talked about the

process of recruiting males into elementary education. In their article, *Recruiting Male Teachers,* Cunningham and Watson (2002) discussed the roles of stakeholders involved in recruiting male teachers. There are many roles to recruit male teachers, including "administrators, teacher educators, career counselors, and the teachers of young children themselves" (p. 10). In each of these roles, Cunningham and Watson (2002) gave advice to the stakeholder in each of these positions. For instance, Cunningham and Watson (2002) advised administrators to recruit male staff by hiring them for entry level positions, such as teacher assistants and paraprofessionals.

Initiatives around the world have been implemented to encourage men to enter the teaching profession. In the United Kingdom, the Teaching Agency put together a Primary Experience program in which pre-service teaching candidates were matched with inspirational male teachers (Gibbs, 2012). In Australia, the government also utilizes strategies encourage men to enter the teaching profession (New South Wales Department of Education and Communities, 2014). In 2013, the Toronto School District Board in Canada gave preference to males when hiring new educators (Lett, 2013).

In the United States, MenTeach is a program that seeks to promote teaching as a profession to males. MenTeach was founded in 1979 to increase the number of men working with young children. Since it was founded, the group has presented at state and national conferences and has developed literature in regards to the importance of males at the elementary level. The program provides news, resources, forums, and collegial connections for the public and MenTeach members. Although this program has generated interest and literature regarding males in elementary education, the number of female teachers continues to drastically exceed the number of male teachers.

Furthermore, elementary school principals and administrators seek out male teaching candidates. Cushman (2008) surveyed 250 primary school principals. The survey included questions to investigate the principals' views of male teachers in the classroom. Perceptual questions included a rating system and open-ended questions. Cushman (2008) found that school administrators wanted more male teachers in the school system. At the conclusion of the study, Cushman (2008) reported 94% of the male principals and 87% of the female principals agreed that education systems need more male role models. However, the reason these principals wanted more male teachers did not follow any ideology or pedagogy. Instead, the general consensus from this study showed that principals had the same viewpoint as the rest of society (Cushman, 2008). Society would like more males in education, specifically elementary education, because students without positive male role models need this void filled in their lives.

Academic Discrepancies Between Male and Female Students

Dee (2006) researched the link between teacher gender and student achievement. Dee used the data from the National Education Longitudinal Survey (NELS), which organized student achievement data and teacher gender. The data included 24,599 8th grade students. Dee (2006) found that students learn best when they are taught by teachers of the same gender. In Dee's study, female students with a female teacher raised the achievement of girls by 4%.

Orr (2011) studied discrepancies between 6,394 kindergarten students enrolled in public education. The data set included surveys to parents, teachers, and school administrators, as well as academic achievement assessments. These data included student achievement throughout a school year and teacher perceptions of male and female

students at the kindergarten level. A multivariate analysis of variance (MANOVA) based on the data was conducted. Orr's (2011) study found that boys were more likely to have a negative attitude toward school while girls were more likely to have a positive attitude towards school. Expectedly, these attitudes towards school often resulted in corresponding test scores. With the correlation Orr found between the positive attitudes towards school and positive grades, she noted the discrepancy between boys and girls started in early childhood classrooms. At the kindergarten level, Orr (2011) found a negative attitude towards school had a negative impact on student achievement.

In a report about state testing results commissioned by the Center of Education Policy (Sadowski, 2010) the following findings about the academic achievement discrepancy between male and female students in public education were summarized:

> The report, which outlined results on state accountability tests, noted that the percentage of boys scoring "proficient" or higher in reading was below that of girls at all grade levels tested and in every state for which sufficient data were available. (p. 10)

According to Sadowski (2010), this alarming trend is not restricted to the United States. Instead, a gender gap is developing around the world. Boys were falling behind girls in reading and mathematics at increasing rates.

In order to equalize the opportunity for academic achievement for boys and girls in education, O'Neil and LuJan (2009) identify an assumption that exists in literature about boys in education. The assumption is many teachers use the excuse of 'boys will be boys' when they act out. This means when boys have behavioral or academic issues, the issues are considered normal and not significant. O'Neil and LuJan (2009) agree this

is not an acceptable way to handle behavioral or academic situations in the school setting. Instead, these negative actions often mean something deeper.

In order to combat the discrepancy between boys and girls, researchers and education professionals have conducted studies regarding male teachers (Cushman, 2008; McGrath & Sinclair, 2013; Roulston & Mills, 2000; Tucker, 2015). Carrington and Skelton (2003) suggested men are positive role models and mentors to students. Similarly, Schwartz (2002) recommended having a male in the classroom at the elementary level. Schwartz (2002) stated "men can model reading by doing so themselves and reading aloud to children, and by telling children why reading enriches their own lives" (p. 4).

Student Gender and Academic Achievement

While the call for more male role models is evident in the literature, the research related to teacher gender and student achievement is limited and reveals mixed results. Piechura-Couture, Heins, and Tichenor (2013) found that single-gender classrooms have a positive effect on student achievement. Piechura-Couture, Heins, and Tichenor (2013) distributed surveys to teachers of single-gender classrooms in South Carolina. Surveys were also disseminated to students and families. Approximately 2200 students, 178 parents, and 181 teachers completed the survey. The survey included questions that pertained to single-gender classrooms. Based on survey results, Piechura-Couture, Heins, and Tichenor (2013) found that single-gender classrooms have a positive impact on students in the classroom. However, the study did not disaggregate the data based on the gender of the teacher. Students, parents, and teachers all reported that students in single-gender classrooms were more likely to participate during class, have a positive attitude in

school, complete classwork, and increased student desire to succeed in academics. Specifically, this research study also found that African-American male students benefited the most from single-gender classrooms, regardless of teacher gender. Based on the results of the survey, 78% of the 592 African-American males strongly agreed, agreed, or somewhat agreed with the statement "By being in the single-gender program, I have increased or improved my ability to succeed in school" (Piechura-Couture, Heins, & Tichenor, 2013, p. 241).

In contrast to Piechura-Couture, Heins, and Tichenor (2013), Krieg (2005) found that elementary students learn best from female teachers. Krieg (2005) studied a cohort of fourth grade students in Washington. The group of students included 49,415 students from 965 school buildings. Students involved in this study took the Washington Assessment of Student Learning (WASL). Krieg (2005) found that students perform better in classrooms with a female teacher than classrooms with a male teacher. Krieg (2005) found that "male teachers have students that fail the WASL with 6.9% greater frequency than female teachers" (p. 21).

While Krieg (2005) found elementary students learned best from female teachers, Marsh, Martin, and Cheng (2008) found the gender of a teacher had no impact on student achievement at the middle and high school level. Students that had female teachers performed the same as students with male teachers. Additionally, Marsh, Martin, and Cheng (2008) found female students outperformed their male counterparts in a variety of subjects. These subjects include reading, mathematics, and science. The average female participant was also more positively motivated than boys.

McGrath and Sinclair (2013) conducted research based on the gender of primary school teachers. Throughout this study, 97 parents and 185 sixth-grade students from Sydney, Australia participated in surveys. McGrath and Sinclair (2013) began their research by calling "for more male primary-school teachers has long been associated with the educational needs of boys, the importance of positive male role models in schools and the disproportionate number of male and female primary-school teachers internationally" (p. 531). Throughout their study, McGrath and Sinclair (2013) found teacher gender does not indicate a statistically significant difference in terms of student achievement among students. Instead, their research is a collection of positive attitudes towards males working in elementary education. Conclusions from this study found that parents and students see male primary teachers as role models and father-figures.

Instructional Style and Classroom Management

Instruction within classrooms across the United States has undergone changes in recent years. The Common Core State Standards Initiative (Common Core State Standards Initiative, 2015) redefined standards in both reading and mathematics. In reading, three shifts were identified: (a) regular practice with complex texts and their academic language, (b) reading, writing, and speaking grounded in evidence from texts, both literary and information, and (c) building knowledge through content-rich nonfiction. Three shifts were also identified in mathematics: (a) greater focus on fewer topics, (b) linking topics and thinking across grades, and (c) pursue conceptual understanding, procedural skills and fluency, and application with equal intensity. With the shifts in grade level expectations, educators have also begun to shift instructional styles to promote student engagement.

One shift in instructional style is the move from traditional classrooms to student center classrooms (Genc & Ogan-Bekiroglu, 2006). However, the research between teacher gender and instructional style is limited. Genc and Ogan-Bekiroglu (2006) conducted a study to analyze the teaching styles of 100 randomly selected middle- and high-school science teachers in Florida. The teachers were sent a survey based on classroom instruction strategies. Teachers were grouped into four categories based on instructional styles, including a) somewhat traditional, b) transitional, c) somewhat individualized, and d) student centered. At the conclusion of the study, Genc and Ogan-Bekiroglu (2006) found the gender of the teacher did not have a significant correlation to instructional style. Therefore, the gender of the teacher did not indicate a certain instructional style would take place in the classroom.

Quality instruction requires classroom management. Marzano and Marzano (2003) stated "classroom management had the largest effect on student achievement" (p. 6). Rubie-Davies, Flint, and McDonald (2012) conducted a study that analyzed instructional strategies, classroom management, and student engagement among female and male teachers. The study included 68 teachers, 57 females and 11 males, from 18 schools in New Zealand. Of the 68 teachers, 52 teachers were from primary schools, which included students from ages 8 to 10. The participating teachers were sent a questionnaire to begin the study. The questionnaire asked teachers to reflect on their beliefs. Reading achievement data was also analyzed in this study. Students were assigned a code that linked the student to their teacher. At the conclusion of the study, the researchers found female teachers routinely performed better than male teachers in all

three areas. However, the researcher made note that the sample size of 11 male teachers was relatively low compared to the sample size of female teachers.

Socioeconomic Status and Academic Achievement of Students

Socioeconomic status (SES) has also been considered a predictor of student academic achievement. Stull (2013) conducted a study which reviewed data collected from the Early Childhood Longitudinal Study (ECLS). This study included 22,000 kindergarten students enrolled in 900 kindergarten programs. The parent(s) of the student provided the demographics and socioeconomic status of the family via a 40-50 minute phone call. The participants were asked questions regarding academic expectations they held for their children. The findings of this study revealed the following:

> Only 5.9% of the high-SES/low-achieving students' parents expect them to complete twelve years [of education] or less, the percentage of the low-SES/low-achieving students is 27.4%. At the other end of the spectrum, while 86.4% of the high-SES/high achieving students are expected to earn a Bachelor's degree or higher, the percentage for the low-SES/high-achieving students was 60.4%. (Stull, 2013, p. 61)

SES has important implications for expectations of a child's academic career. Families from low SES seemed to have low expectations for their students graduating from high school or college, regardless of academic achievement in early education years. Stull (2013) found "an achievement gap already exists when children begin school" (p. 63).

Standardized test results show the impact of SES on academic achievement. Bentzel (2012) conducted a study by analyzing archival data from the Pennsylvania

Information Management System. The researcher reviewed data from a cohort of students from 2007-2010. During the 2007-2008 school year, the students were in third grade. From 2008-2009, students were in fourth grade. Finally, the cohort was in fifth grade during 2009-2010. The sample included over 100,000 students. Bentzel (2012) conducted a one-way analysis of variance (ANOVA) to analyze the data. After analyzing the data, the researcher found "students with greater poverty had statistically lower performance in reading and mathematics when compared to students with lesser poverty" (Bentzel, 2012, p. 136).

Similarly, Martinez-Perez (2013) conducted a study among 843 third, fourth, and fifth grade students in Texas. The researcher looked at archival data from the 2012-2013 State of Texas Assessment of Academic Readiness (STAAR). The researcher conducted a binary logistical regression to analyze the data. The researcher found "socioeconomic status had a significant impact on third, fourth, and fifth grade STAAR reading passing scores" (Martinez-Perez, 2013, p. 63). Specifically, if a student was classified as having a low socioeconomic status, they were not as likely to pass the reading test.

Findings in the report *Poverty in Missouri* (Missouri Association for Community Action, 2016) showed poverty negatively impacts student achievement. "For children who were eligible for free/reduced lunch—a key indicator of child poverty—the average scores for math and reading proficiency were 21 to 27 points lower than students who were not eligible" (Missouri Association for Community Action, 2016, p. 6).

Attendance and Academic Achievement

High student achievement has been linked to regular attendance. Daugherty (2008) conducted a study that involved 6,656 students in grades eight and ten in a school

district in Delaware. During this study, the students took the required state assessment from the Delaware State Testing Program (DSTP) during 2004-2005, 2005-2006, and 2006-2007. Additionally, attendance rates were tracked for these students. The researcher conducted a cross-sectional design study to compare attendance rates and academic achievement. Daugherty (2008) found a "linear pattern existed for students in both eighth and tenth grade… the more days absent from school, the lower the DSTP scale score in both reading and math" (p. 109).

Jones (2010) conducted a study that involved 454 middle schools in Georgia during the 2007-2008 school year. During the study the researcher used data from the Georgia Criterion Referenced Competency Test (CRCT), which was a mandated test throughout Georgia during the 2007-2008 school year. After comparing student attendance and CRCT reading and mathematics scores, the researcher found students who missed more than 15 days of school score lower on the CRCT test.

Similarly, Parke and Kanyongo (2012) conducted a study that involved 32,000 students from 80 schools. Of the 80 schools, 53 were elementary schools with grade levels kindergarten to fifth grade. During the 2004-2005 school year, attendance was tracked for the students involved in the study. Additionally, the researchers quantified student achievement by looking at how students scored on the Pennsylvania System of School Assessment (PSSA). Using an ANOVA, the researchers found the attendance rate of a student had a direct correlation with the lower academic achievement in mathematics. Parke and Kanyongo (2012) found "significant effects of attendance-mobility on mathematics achievement for each grade level tested by the state assessment" (p. 172).

Sprick, Alabiso, and Yore (2015) elaborated on concerns about chronic absenteeism.

> A growing body of research indicates that missing 10% of the year or more for any reason- including unexcused absence, excused absence, and suspension- places students at a significant risk of negative outcomes, including academic difficulty and failure, increased involvement in the juvenile justice system, and dropping out. (p. 51)

Although student achievement and attendance studies have been done, no known research studies have been completed that link a teacher's gender to attendance rates. Instead, the research focuses on ways to increase attendance to promote student achievement.

Summary

Chapter two provided a review of the literature that relates to this study. The first topic was the establishment of school systems in the United States. This included a brief look into the gender of teachers throughout the history of public education. Teaching as a profession was also discussed. This included literature that pertained to selecting teaching as a career. The chapter then reviewed studies on student academic performance and the gender of students in the classroom. Next, literature exploring socioeconomic status and the impact of poverty on education was discussed. Chapter two concluded with a review of attendance and the impact attendance has on academic growth.

In chapter three, the methods used to study the relationship between teacher gender and student academic growth are described. Research design and selection of participants are the first component of chapter three. Then, measurement tools are

described and include validity and reliability. Chapter three ends with data collection procedures, data analysis and hypothesis testing, limitations, and a summary.

Chapter Three

Methods

The primary purpose of this study was to determine the extent there was a difference in academic growth between students in classrooms with male teachers and students in classrooms with female teachers. A second purpose of this study was to determine the extent there was a difference in academic growth between female and male students. A third purpose of the study was to determine the extent student socioeconomic status impacted differences in academic growth and attendance between students in classrooms with male teachers and students in classrooms with female teachers. A final purpose of the study was to determine the extent there was a difference in student attendance between students with a male teacher and students with a female teacher. Chapter three begins with a description of the research design including the identification of the independent and dependent variables. The selection of the participants used throughout the study are then discussed. This chapter also provides an overview of measurement, the validity and reliability of the measurement and data collection procedures. The chapter also includes a description of the data analysis, hypothesis testing, and limitations.

Research Design

A quantitative research design was used to investigate the researcher's hypotheses. The independent variables for this research were teacher gender, student gender, and student socioeconomic status (SES). The dependent variables included academic achievement using the scaled score on the STAR Reading and STAR Mathematics assessments, and student attendance.

Selection of Participants

The population for this research study was third, fourth, and fifth grade students in District X. Students in five classrooms with male teachers were selected for this study. Additionally, five classrooms with female teachers were selected for this study.

Purposive sampling was used in this study to identify students related to the researcher's prior knowledge of the group being sampled (Lunenburg & Irby, 2008). Data was collected from third, fourth, and fifth grade students enrolled in District X. To be included in the sample, students were enrolled for the duration of the 2015-2016 school year. Additionally, this same group of students completed the fall and spring STAR Reading and Mathematics assessments. The fall test was administered during the months of September and October in 2015 and the spring test was administered in April and May 2016.

Measurement

The STAR Assessments are standards-based tests that measure student performance in key reading and mathematics skills (Research Foundation for STAR Assessments, 2014). The STAR Reading Assessment and STAR Mathematics Assessment are administered to all third and fifth grade students in District X.

Students take these assessments at the beginning of the year as required by District X. The assessments are computer adaptive and change in difficulty based on whether the student correctly answers the question or not. Based on the answer the student provides, the test either increases or decreases in difficulty.

The STAR Reading and Mathematics Assessments are timed. Students are permitted one minute to answer each question in both reading and mathematics. At the

end of the assessment, the STAR Reading and STAR Mathematics Assessment generate a Student Report that provides multiple scores including criterion-referenced and norm-referenced scores (Renaissance Learning, 2015b). Special accommodations are provided for students with an Individualized Education Program (IEP). If a student has an IEP or 504 plan that allows extended time on testing, the computer testing program adds an additional 30 seconds for each problem. Other accommodations include the text to be read aloud to the student and increased font size, depending on the IEP or 504 for the student.

STAR Reading Assessment. Renaissance Learning, the company that designed the STAR Reading Assessment provided the following description:

> [The STAR Reading assessment] is a challenging, interactive, and brief (about 15 minutes) assessment, consisting of 34 questions per test, that evaluates a breadth of reading skills appropriate for grades K–12. The assessment's repeatability and flexibility in administration provide specific advantages for everyone responsible for the education of students. (Renaissance Learning, 2014, p. 3)

STAR reading assesses 46 reading skills in 11 domains (Renaissance Learning, 2015b). These are separated into four categories, including foundational skills, reading literature, reading informational text, and language.

Academic growth in reading is determined by the scaled score. Academic growth is determined by subtracting the fall 2015 STAR Reading scaled score from the spring 2016 STAR Reading scaled score (Renaissance Learning, 2015a). The range of the scaled score is between 0 and 1400.

STAR Mathematics Assessment. The STAR Mathematics Assessment is also a computer adaptive test that adjusts the difficulty of questions based on student answers. Renaissance Learning (2014) provided the following description:

> [The STAR Mathematics Assessment] is a challenging, interactive, and brief (about 20 minutes) assessment, consisting of 34 items per test, that evaluates students' mathematical abilities in grades K–12. Like STAR Reading Enterprise, its repeatability and flexibility in administration provide specific advantages for educators. (p. 5)

STAR Mathematics assesses 214 mathematical skills in 8 strands. The strands include numeration concepts; computation processes; estimation; geometry; measurement; data analysis and statistics; word problems; and algebra (Renaissance Learning, 2016).

Academic growth in mathematics will be determined by the scaled score. Academic growth will be determined by subtracting the fall 2015 STAR Mathematics scaled score from the spring 2016 STAR Mathematics scaled score (Renaissance Learning, 2015a). The range of the scaled score is between 0 and 1400.

Socioeconomic status. School districts in the United States classify each student based on lunch payment status as determined by the National School Lunch Program (NSLP) (United States Department of Agriculture, 2016). All families are given the opportunity to apply for the Free and Reduced Price School Meals Program. For this study, three groups were used to define SES. The groups included free lunch, reduced lunch, and regular priced lunch.

Attendance. Attendance is tracked each day by classroom teachers. Office personnel are required to confirm all student absences via phone calls or e-mail messages.

After confirmation of absences, the office personnel input absent students' names into the Student Information System (SIS). Throughout the day, the office staff also updates SIS regarding late arrivals, students dismissed early, and other times students are not in session. By continuously implementing these procedures each school day throughout the year, SIS generates a report of the attendance history of each student. School days are seven hours long, and the school year in District X consisted of 170 days. Therefore, a student who attended every hour of each day attended 1190 hours during the 2015-2016 school year. The final report generated by SIS at the end of the school year shows the percentage of time, rounded to the nearest percent, a student has been present at school which is a dependent variable of this research study (Tyler Technologies, 2016).

Validity and reliability. Lunenburg and Irby (2008) identified content validity as the degree an instrument measures what it purports to measure. The STAR Reading and Mathematics assessments align with the Missouri Assessment Program (MAP) test given the end of each school year (Renaissance Learning, 2014). Renaissance Learning (2014) consistently analyzes tests for validity:

> Content is a crucial facet of test validity; content-related evidence of validity lies in the degree of correspondence, or alignment, between the knowledge and skills measured by an assessment's test items and the knowledge and skills intended to be taught and learned in a given curriculum at a given grade level or levels. (Renaissance Learning, 2014, p. 22)

STAR Reading validity and reliability. In order to check the validity of the STAR Reading tests, Renaissance Learning collected data based on how students performed on the STAR test and the MAP test. Over 200,000 students were involved

with the STAR Reading test for validity. Renaissance Learning (2014) stated the following:

> Renaissance Learning collected a wide range of correlations between scores on STAR Reading and scores on other recognized, established measures of different aspects of reading achievement, such as survey achievement tests, diagnostic reading measures, and state accountability tests, among others. (p. 23)

Since both the STAR Reading Assessment and MAP are aligned to state standards, the validity studies show a strong correlation to predict student achievement. The validity of STAR Reading tests that were disseminated by Renaissance Learning (2014) are presented in Table 2.

Table 2

Summary of STAR Reading Validity Studies

Grade	Studies	Students	Average Correlation
3	30	200,929	0.80
4	25	185,528	0.82
5	29	126,029	0.82

Note. Adapted from "*The Research Foundation for STAR Assessments*," by Renaissance Learning, 2014, p. 23, Copyright 2014 by Renaissance Learning.

Correlations for third, fourth, and fifth grade students were between 0.80 and 0.82. All correlations in this range are considered to be evidence for a strong relationship (Renaissance Learning, 2014).

Reliability is the extent to which an instrument dependably measures what it is intended to measure (Lunenburg & Irby, 2008). Between September 2012 and June 2013, 1.2 million STAR Reading tests were analyzed. Internal reliability coefficients ranged from .01 to .99 (Renaissance Learning, 2014). The internal reliability coefficient

for the STAR Reading tests averaged between 0.93 and 0.94, which is considered a strong coefficient. Therefore, the reliability of the STAR Reading Assessment consistently produces reliable test scores.

STAR Mathematics validity and reliability. Over 52,000 students were involved with the STAR Mathematics test for validity (Renaissance Learning, 2014). Table 3 shows the validity of STAR Math tests that were disseminated by Renaissance Learning. Since both the STAR Mathematics Assessment and MAP are aligned to state standards, the validity studies show a strong correlation to predict student achievement. The validity of STAR Mathematics tests that were disseminated by Renaissance Learning (2014) are presented in Table 3.

Table 3

Summary of STAR Mathematics Validity Studies

Grade	Studies	Students	Average Correlation
3	30	52,604	0.66
4	23	55,285	0.69
5	29	39,869	0.70

Note. Adapted from "*The Research Foundation for STAR Assessments*," by Renaissance Learning, 2014, p. 26, Copyright 2014 by Renaissance Learning.

Average correlations in the math validity study ranged from .66 to .70. All correlations in this range are considered to be evidence for a moderately strong relationship (Renaissance Learning, 2014). Additionally, a subset of students retook the STAR Mathematics test to check for internal reliability. After retaking this test, students in grades three through five had a reliability coefficient between 0.81 and 0.83 (Renaissance Learning, 2014). The reliability coefficient shows the internal consistency is "very high,

equaling or exceeding those of most major published assessments" (Renaissance Learning, 2014, p. 25).

Data Collection Procedures

The researcher received approval from District X on July 11, 2016 to gather data by filling out a request form from the Assistant Superintendent (see Appendix A). Prior to conducting the study, the researcher submitted an Institutional Review Board (IRB) application to Baker University requesting permission to conduct the quantitative research (see Appendix B). Permission was received from Baker University on August 1, 2016 (see Appendix C) to proceed with the research project.

The independent variables were teacher gender, student gender, and student socioeconomic status. This information was gathered from the School Information System (SIS). The SIS stores data for each teacher and student. Teacher data includes the gender of the teacher. Student data includes student gender and student socioeconomic status. District X classifies each student into a socioeconomic group in SIS by labeling them as free, reduced, or standard lunch pricing. The dependent variables were student academic growth in reading and mathematics and student attendance. STAR pretest and posttest scores were collected for students in the 10 selected classrooms. Of these 10 classrooms, 5 were led by males and 5 were led by females. Attendance rates were gathered from archived SIS data. The independent and dependent variables were imported into IBM SPSS Statistics Faculty Pack 24 for Windows for the analysis.

Data Analysis and Hypothesis Testing

The following research questions and hypotheses guided the study. The section includes nine research questions with corresponding hypotheses. Additionally, a description of the statistical analysis used to test each hypothesis is included in this section.

RQ1. To what extent is there a difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers?

***H1*.** There is a difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers.

RQ2. To what extent is the difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student gender?

H2. The difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers is affected by student gender.

A two-factor ANOVA was conducted to test H1 and H2. The two categorical variables used to group the dependent variable, academic growth in reading, were teacher

gender and student gender. The two-factor ANOVA was used to test two hypotheses including a main effect for teacher gender and a two-way interaction effect (Teacher Gender x Student Gender). The main effect for teacher gender was used to test H1. The interaction effect for teacher gender by student gender was used to test H2. The level of significance was set at .05.

RQ3. To what extent is the difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student socioeconomic status?

H3. The difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth students in classrooms with female teachers is affected by student socioeconomic status.

A second two-factor ANOVA was conducted to test H3. The two categorical variables used to group the dependent variable, academic growth in reading, were teacher gender and student socioeconomic status. The two-factor ANOVA was used to test one hypothesis for an interaction effect for teacher gender by student socioeconomic status. The level of significance was set at .05.

RQ4. To what extent is there a difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers?

H4. There is a difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers.

RQ5. To what extent is the difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers affected by student gender?

H5. The difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers is affected by student gender.

A third two-factor ANOVA was conducted to test H4 and H5. The two categorical variables used to group the dependent variable, academic growth in mathematics, were teacher gender and student gender. The two-factor ANOVA was used to test two hypotheses including a main effect for teacher gender and a two-way interaction effect (Teacher Gender x Student Gender). The main effect for teacher gender was used to test H4 and the interaction effect for teacher gender by student gender was used to test H5. The level of significance was set at .05.

RQ6. To what extent is the difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and

third and fifth grade students in classrooms taught by female teachers affected by student socioeconomic status?

H6. The difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers is affected by student socioeconomic status.

A fourth two-factor ANOVA was conducted to test H6. The two categorical variables used to group the dependent variable, academic growth in mathematics, were teacher gender and student socioeconomic status. The two-factor ANOVA was used to test one hypothesis for an interaction effect for teacher gender by student socioeconomic status. The level of significance was set at .05.

RQ7. To what extent is there a difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers?

H7. The difference in attendance between third and fifth grade stduents in classrooms with male teachers and third and fifth grade students in classrooms with female teachers is affected by teacher gender.

RQ8. To what extent is the difference in attendance rates between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student gender?

H8. The difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade female teachers is affected by student gender.

A fifth two-factor ANOVA was conducted to test H7 and H8. The two categorical variables used to group the dependent variable, attendance, were teacher gender and student gender. The two-factor ANOVA was used to test two hypotheses including a main effect for teacher gender and a two-way interaction effect (Teacher Gender x Student Gender). The main effect for teacher gender was used to test H7 and the interaction effect for teacher gender by student gender was used to test H8. The level of significance was set at .05.

RQ9. To what extent is the difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student socioeconomic status?

H9. The difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers is affected by student socioeconomic status.

A sixth two-factor ANOVA was conducted to test H9. The two categorical variables used to group the dependent variable, attendance, were teacher gender and student socioeconomic status. The two-factor ANOVA was used to test one hypothesis for an interaction effect for teacher gender by student socioeconomic status. The level of significance was set at .05.

Limitations

Lunenberg and Irby (2008) identified limitations as external factors that are out of control of the researcher. Limitations for the current study included the following:

- The quality of reading and mathematics instruction varies by teacher regardless of gender.

- The pacing of curriculum coverage may vary by teacher.
- Some students who qualify for reduced SES status do not apply for services.
- Illnesses, family emergencies, and other external factors impact student attendance.

Summary

Chapter three provided an overview of the research design utilized for the current study. The chapter began by reviewing the research design as well as information on the selection of participants, and sampling procedures. Chapter four provides the results of the hypothesis tests.

Chapter Four

Results

The primary purpose of this study was to determine the impact of teacher gender on student academic growth in reading and mathematics. The second purpose of this study was to determine the impact of teacher gender on student academic growth from different socioeconomic backgrounds. The third purpose of this study was to determine the impact of teacher gender on student attendance. The nine research questions that guided the current study are addressed through the results of the data analysis provided in chapter four. Chapter four begins with descriptive statistics, followed by the results of the hypotheses testing.

Descriptive Statistics

Third and fifth grade students were included from District X in the current study. Fourth grade students were not included in this study because District X did not have any fourth grade classrooms taught by a male teacher. This sample of students included 125 students with 5 female teachers and 120 students with 5 male teachers. Table 4 shows the number of female and male students in classrooms led by male and female teachers.

Table 4

Teacher Gender and Student Sample

Teacher Gender	Student Gender	Students
Female	Female	62
	Male	63
Male	Female	62
	Male	58

Hypothesis Testing

This section includes the results of the hypotheses testing. The nine research questions and nine hypotheses are listed followed by an analysis of the results from the six ANOVA tests. The IBM Statistics 24.0 Faculty Pack for Windows was used to analyze the data for the research questions.

RQ1. To what extent is there a difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers?

***H1*.** There is a difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers.

The results of the analysis for H1 indicated there was not a statistically significant difference between the means, $F = .742$, $df = 1, 241$, $p = .390$. See Table 5 for the means and standard deviations for this analysis. No post hoc was warranted. The difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers was not statistically significant.

Table 5

Descriptive Statistics for the Results of the Test for H1

Teacher Gender	*M*	*SD*	*N*
Female	72.21	118.30	125
Male	59.12	112.77	120

RQ2. To what extent is the difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student gender?

H2. The difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers is affected by student gender.

The results of the analysis for H2 indicated a marginally significant difference between at least two of the means, $F = 3.366$, $df = 1, 241$, $p = .068$. See Table 6 for the means and standard deviations for this analysis. The mean reading score for female students of female teachers ($M = 84.66$) was higher than the mean for male students of female teachers ($M = 59.95$). The mean for female students of male teachers ($M = 44.92$) was lower than the mean for male students of male teachers ($M = 74.29$). The effect of student gender in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers was marginally significant.

Table 6

Descriptive Statistics for the Results of the Test for H2

Teacher Gender	Student Gender	*M*	*SD*	*N*
Female	Female	84.66	112.67	62
	Male	59.95	123.25	63
Male	Female	44.92	99.31	62
	Male	74.29	124.67	58

RQ3. To what extent is the difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student socioeconomic status?

H3. The difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers is affected by student socioeconomic status.

Prior to conducting the analysis, socioeconomic status was recoded from three categories to two categories. This was done because the number ($n = 7$) of reduced lunch students was relatively small. The results of the analysis for H3 indicated there was not a statistically significant difference between at least two of the means, $F = 0.0003$, $df = 1, 241$, $p = .987$. See Table 7 for the means and standard deviations for this analysis. A post hoc was not warranted. The difference in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score,

between third and fifth grade students in classrooms with male teachers and third and fifth students in classrooms with female teachers was not affected by student SES.

Table 7

Descriptive Statistics for the Results of the Test for H3

Teacher Gender	Student SES	*M*	*SD*	*N*
Female	Full Pay	78.93	130.41	57
	Free or Reduced	66.57	107.77	68
Male	Full Pay	65.65	112.58	54
	Free or Reduced	53.77	113.51	66

Note. SES = Socioeconomic status.

RQ4. To what extent is there a difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers?

H4. There is a difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers.

The results of the analysis for H4 indicated there was not a statistically significant difference between the means, $F = 0.595$, $df = 1, 241$, $p = .441$. See Table 8 for the means and standard deviations for this analysis. A post hoc was not warranted. The difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in

classrooms with male teachers and third and fifth grade students in classrooms with female teachers was not statistically significant.

Table 8

Descriptive Statistics for the Results of the Test for H4

Teacher Gender	*M*	*SD*	*N*
Female	58.29	67.90	125
Male	66.01	85.21	120

RQ5. To what extent is the difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers affected by student gender?

H5. The difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers is affected by student gender.

The results of the analysis for H5 indicated there was not a statistically significant difference between at least two of the means, $F = .176$, $df = 1, 241$, $p = .675$. See Table 9 for the means and standard deviations for this analysis. No post hoc was warranted. The difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers was not affected by student gender.

Table 9

Descriptive Statistics for the Results of the Test for H9

Teacher Gender	Student Gender	*M*	*SD*	*N*
Female	Female	64.61	64.04	62
	Male	52.06	71.46	63
Male	Female	68.08	71.01	62
	Male	63.79	98.76	58

RQ6. To what extent is the difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms taught by male teachers and third and fifth grade students in classrooms taught by female teachers affected by student socioeconomic status?

H6. The difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers is affected by student socioeconomic status.

As was noted in the results paragraph for H3, socioeconomic status was recoded from three categories to two categories. The results of the analysis for H6 indicated there was not a statistically significant difference between at least two of the means, $F = 0.003$, $df = 1, 241$, $p = .959$. See Table 10 for the means and standard deviations for this analysis. A post hoc was not warranted. The difference in academic growth in mathematics, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male

teachers and third and fifth students in classrooms with female teachers was not affected by student SES.

Table 10

Descriptive Statistics for the Results of the Test for H6

Teacher Gender	Student SES	*M*	*SD*	*N*
Female	Full Pay	72.42	65.40	57
	Free or Reduced	46.44	68.16	68
Male	Full Pay	79.74	74.78	54
	Free or Reduced	54.77	91.93	66

Note. SES = Socioeconomic status.

RQ7. To what extent is there a difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers?

H7. The difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade female teachers is affected by teacher gender.

The results of the analysis for H7 indicated there was not a statistically significant difference between the means, $F = 1.780$, $df = 1, 241$, $p = .183$. See Table 11 for the means and standard deviations for this analysis. No post hoc was warranted. The difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade female teachers was not statistically significant.

Table 11

Descriptive Statistics for the Results of the Test for H7

Teacher Gender	*M*	*SD*	*N*
Female	.96	.04	125
Male	.97	.03	120

RQ8. To what extent is the difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student gender?

H8. The difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade female teachers is affected by student gender.

The results of the analysis for H8 indicated there was not a statistically significant difference between the means, $F = .019$, $df = 1, 241$, $p = .891$. See Table 12 for the means and standard deviations for this analysis. No post hoc was warranted. The difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade female teachers was not affected by student gender.

Table 12

Descriptive Statistics for the Results of the Test for H8

Teacher Gender	Student Gender	*M*	*SD*	*N*
Female	Female	.96	.04	62
	Male	.96	.04	63
Male	Female	.96	.03	62
	Male	.97	.04	58

RQ9. To what extent is the difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers affected by student socioeconomic status?

H9. The difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers is affected by student socioeconomic status.

The results of the analysis for H9 indicated there was not a statistically significant difference between the means, $F = .906$, $df = 1, 241$, $p = .342$. See Table 13 for the means and standard deviations for this analysis. No post hoc was warranted. The difference in attendance between third and fifth grade students in classrooms with male teachers and third and fifth grade female teachers was not affected by student socioeconomic status.

Table 13

Descriptive Statistics for the Results of the Test for H9

Teacher Gender	Student Gender	*M*	*SD*	*N*
Female	Female	.97	.03	57
	Male	.95	.05	68
Male	Female	.97	.02	54
	Male	.96	.04	66

Summary

Chapter four included a summary of the statistical testing and analysis results. Results from the statistical testing of H2 indicated female students of female teachers showed marginally significant growth in reading while academic growth in reading of male students was not statistically significant. Teacher gender did not have a statistically

significant impact on student academic growth in mathematics. Teacher gender did not have a statistically significant impact on academic growth of students from different socioeconomic backgrounds. Also, teacher gender did not have a statistically significant impact on student attendance. Chapter five includes a summary of the study, an overview of the problem and purpose statement, review of methodology, major findings, findings related to literature, conclusions, implications for action, and recommendations for future research.

Chapter Five

Interpretation and Recommendations

The population of female elementary teachers has long outnumbered male elementary teachers (Snyder & Dillow, 2012). The majority of research dedicated to teacher gender has focused on male teachers as role models (McGrath & Sinclair, 2013; Petersen, 2014; Roulston & Mills, 2000). The few studies that have investigated the impact of teacher gender on student growth have shown conflicting results (Krieg, 2005; Martin & Marsh, 2005; Marsh, Martin & Cheng, 2008). Chapter five includes a summary of the study, an overview of the problem, a review of the purpose statement, a review of the methodology, major findings, and findings related to the literature. The chapter concludes with implications for school districts and leaders, recommendations for future research, and concluding remarks.

Study Summary

This study provided an in-depth analysis of the impact of teacher gender on student academic growth and attendance of third and fifth grade students. Research questions included a comparative analysis of teacher gender and student gender, student socioeconomic status, and attendance. The study utilized archival data from District X. Nine research questions were generated with nine corresponding hypotheses. Six two-factor ANOVAs were conducted using STAR assessment data and student attendance in District X.

Overview of the problem. The majority of the literature and research currently dedicated to teacher gender focuses on male teachers as role models. The studies called for more male teachers in the classroom because of the perceived need for a positive male

role model at the elementary level (Cushman, 2008; Dee, 2006; Gibbs, 2012; Tucker, 2015). However, the number of men entering the teaching profession continues to stagnate and remain low when compared to the number of women (Jones, 2007; Saban, 2003; Weaver-Hightower, 2011). Though the previously mentioned studies focused on teacher gender, the quantitative studies on the impact of teacher gender on student academic growth is limited and shows discrepancies (Krieg, 2005; Piechura-Couture, Heins, & Tichenor, 2013).

Purpose statement and research questions. The purpose of this study was to determine the extent there was a difference in academic growth between students in upper elementary classrooms with male teachers and students in classrooms with female teachers. Another purpose of this study was to determine the extent there was a difference in academic growth between students of different socioeconomic backgrounds with male teachers and students with female teachers. The final purpose of this study was to determine the extent there was a difference in attendance between male students with male teachers and students with female teachers.

Review of the methodology. A quantitative research design was used to investigate the impact teacher gender has on student academic growth and attendance. The population for this study included third and fifth grade students from District X. Students involved in the study took the STAR reading and mathematics assessments in the fall of 2015 and spring of 2016. The independent variables for this research were teacher gender, student gender, and student socioeconomic status. The dependent variables included student academic growth on the STAR Reading and STAR Mathematics assessments and student attendance. To test the nine hypotheses, six two-

factor ANOVAs were conducted using the IBM Statistics 24.0 Faculty Pack for Windows.

Major findings. In the current research study, eight out of nine hypotheses tested showed teacher gender had no impact on student results on the STAR reading or STAR Mathematics Assessment. In addition, teacher gender did not impact student attendance. However, the two-factor ANOVA utilized to test H2 indicated a marginally significant difference. The effect of student gender in academic growth in reading, as measured by the difference in the fall STAR scaled score and the spring STAR scaled score, between third and fifth grade students in classrooms with male teachers and third and fifth grade students in classrooms with female teachers was marginally significant. Teacher gender did not have a statistically significant impact on the academic growth of students from various socioeconomic backgrounds. Finally, teacher gender did not impact the attendance of male or female students from various socioeconomic backgrounds.

Findings Related to the Literature

The researcher conducted a review of literature related to gender differences in the teaching profession, academic achievement differences between male and female students, implications of socioeconomic status on academic achievement, and attendance of students. The research related to the gender differences in the teaching profession showed conflicting results. Krieg (2005) studied a cohort of almost 50,000 fourth grade students. After analyzing the results of the study, Krieg (2005) found students showed the highest achievement when they had a female teacher. Marsh, Martin, and Cheng (2008) contradicted Krieg's (2008) findings and found that teacher gender had no relationship to student achievement. In the current research study, female students with

female teachers showed marginal growth in reading that male students of female teachers. However, female and male students, taught by either a male or female teacher, did not show a statistically significant difference in academic growth in mathematics.

Dee (2006) analyzed data from 24,599 8th grade students. Dee (2006) found that when female students were placed with a female teacher, female students scored 4% higher on the state mandated assessment. Orr (2011) analyzed data amongst 6,394 kindergarten students. The results of Orr's (2011) study indicated girls outperformed boys. In the current research study, female students of female teachers showed marginally significant growth compared to male students of female teachers.

Research has been done to understand the relationship between socioeconomic status and student achievement. Bentzel (2012) conducted a study by analyzing archival standardized testing data. The researcher found students from poverty performed significantly lower than students from non-poverty families. Martinez-Perez (2013) analyzed archival data amongst third, fourth, and fifth grade students. The researcher found students from poverty were less likely to pass the state required test. In the current research study, the differences in academic growth of students from different socioeconomic classes in classrooms with male teachers and in classes with female teachers was not statistically meaningful.

Conclusions

This study aimed to identify the impact of teacher gender on student academic growth and attendance of third and fifth grade students. The study utilized archival data from the STAR Reading and Mathematics Assessment to determine if teacher gender statistically impacted academic growth. Additionally, the study utilized the same data to

determine if teacher gender statistically impacted academic growth of students from different socioeconomic backgrounds. The study also utilized archival data to determine if teacher gender statistically impacted attendance of third and fifth grade students. The following section includes implications for action by educational leaders to assist in understanding the impact teacher gender has on academic growth and attendance. This section then makes recommendations for future research and ends with concluding remarks.

Implications for action. The current quantitative study investigated the impact of teacher gender on student academic growth and attendance. While the research presented in this study indicated teacher gender had no impact on student academic growth in mathematics, the interaction between teacher and student gender did impact student academic growth in reading. Female students with a female teacher showed marginally significant growth in reading when compared to male students with a female teacher. Since the female students showed more growth in reading when they had a female teacher, district leaders could focus observations on best strategies used by female teachers when working with female students.

Recommendations for future research. Below are recommendations for future research on the impact of teacher gender in the education environment.

1. It is recommended that future researchers replicate the current study but disaggregate the data based on the ethnicity of the students as an extension of the study.
2. It is recommended that future researchers replicate the current study but expand the study to include other grade levels, including middle and high school.

3. It is recommended that future researchers replicate the current study but focus on the correlation between teacher gender and disciplinary issues within the classroom.

4. It is recommended that future researchers replicate the current study and expand the student growth indicators to include other subject areas, including science and social studies.

5. It is recommended that future researchers replicate the current study and focus on single-gender classrooms.

6. It is recommended that future researchers replicate the current study and compare results between urban, suburban, and rural school districts. This type of study would expand the current body of knowledge to include a more varied group of students.

7. It is recommended that future researchers replicate the current study and include more participants by gathering data from larger school districts.

8. It is recommended that future researchers replicate the current study and disaggregate data based on the initial achievement levels of students. Students could then be grouped into a lower achieving group, on-target group, and exceeds expectations group. At the conclusion of the school year, the student academic growth of students in these groups could vary by teacher gender.

Concluding remarks. The current literature and research regarding teacher gender focuses on qualitative studies related to male role models in the classroom, specifically the elementary and middle school levels. Although this has proven to be an

important topic worthy of discussion, additional studies should be conducted to increase the amount of research dedicated to the topic of teacher gender.

This study indicated teacher gender only impacted female students of female teachers because they showed marginally significant growth in reading. Teacher gender did not impact student academic growth in mathematics regardless of student gender. Additionally, teacher gender did not impact the academic growth of students from various socioeconomic backgrounds. Finally, teacher gender did not impact attendance of students. While most of this study revealed teacher gender does not impact various facets of the educational environment, one important part of this study did show a marginally significant difference. Therefore, research should continue to expand upon this study.

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Appendices

Appendix A: Request and Approval from District X

Appendix A: Request and Approval from District X

July 11, 2016

Dear [redacted]

I respectfully submit this letter to officially request permission from the [redacted] to conduct the proposed study as a partial fulfillment for my doctoral degree in Educational Leadership from Baker University. Only archival data will be used for this study. Therefore, no direct contact will be made with students.

The purpose of this study is to determine the impact teacher gender has on academic growth and attendance rates of students in grades three through five. Archival STAR Reading and Math data from the 2015-2016 school year will be used to determine academic growth. Archival data from Student Information Systems (SIS) will be used to collect attendance rates. Student and teacher names will be removed and not associated with this study to protect confidentiality and privacy.

I have included my Institutional Review Board (IRB) request that will be submitted to Baker University. I request your permission to conduct this study as proposed. It is my intent to complete my dissertation by December 1, 2016.

Sincerely,

Timothy Winkelmann

District Representative Granting Study Permissio[redacted]

Position Asst. Supt. HR

Appendix B: Proposal for Research to Baker University

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BAKER UNIVERSITY

Date:_____

SCHOOL OF EDUCATION
GRADUATE DEPARTMENT

IRB PROTOCOL NUMBER _____
(IRB USE ONLY)

IRB REQUEST

Proposal for Research
Submitted to the Baker University Institutional Review Board

I. Research Investigator(s) (Students must list faculty sponsor first)

Department(s) **School of Education Graduate Department**

	Name	Signature	
1.	Dr. Verneda Edwards	Verneda Edwards	Major Advisor
2.	Margaret Waterman	Margaret Waterman	Research Analyst

Principal Investigator: Timothy Joseph Winkelmann
Phone: 636.544.9703
Email: twinkelmann@bsd124.org
Mailing address: 1315 NE 107th Terrace
Kansas City, Missouri 64155

Faculty sponsor: Dr. Verneda Edwards
Phone: 913.344.1227
Email: verneda.edwards@bakeru.edu
Expected Category of Review: __X__Exempt ____ Expedited ____Full

II: Protocol Title
The Impact of Teacher Gender on Elementary Students' Academic Performance

_____

Summary
The following summary must accompany the proposal. Be specific about exactly what participants will experience, and about the protections that have been included to safeguard participants from harm. Careful attention to the following may help facilitate the review process:

In a sentence or two, please describe the background and purpose of the research.

The purpose of this study is to explore the difference in academic performance and attendance between students in classrooms with male teachers and students in classrooms with female teachers. The research will be conducted in [redacted] a midsized suburban district that is comprised of four elementary schools, one K-6 school, and one 5/6th grade school.

Briefly describe each condition or manipulation to be included within the study.

There is no manipulation within this study. The research sample will consist of 10 school teachers and archived student data during the 2015-2016 school year. No identifiable teacher or student information will appear on the spreadsheet.

What measures or observations will be taken in the study? If any questionnaire or other instruments are used, provide a brief description and attach a copy.

Student growth is measured by subtracting a fall score from a spring score. Student mathematics growth scores will be measured by using STAR data from Fall 2015 to Spring 2016. STAR assessments are a product of Renaissance Learning. Additionally, socioeconomic status and attendance will be accessed through the Student Information System (SIS).

Will the subjects encounter the risk of psychological, social, physical, or legal risk? If so, please describe the nature of the risk and any measures designed to mitigate that risk.

The subjects will not encounter the risk of psychological, social, physical, or legal risk. Only archival data will be used.

Will any stress to subjects be involved? If so, please describe.

Archival data will be used so no stress will be involved.

Will the subjects be deceived or misled in any way? If so, include an outline or script of the debriefing.

The subjects will not be deceived or misled in any way.

Will there be a request for information that subjects might consider to be personal or sensitive? If so, please include a description.

Individual identification will not occur throughout the research study.

Will the subjects be presented with materials that might be considered to be offensive, threatening, or degrading? If so, please describe.

The subjects will not be presented with materials that might be considered to be offensive, threatening, or degrading.

Approximately how much time will be demanded of each subject?

The subjects will not be contacted as part of the study, and therefore the study will not ask for any time from any of the subjects. Subjects will not actively participate in any aspect of the study.

Who will be the subjects in this study? How will they be solicited or contacted? Provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of any written solicitation as well as an outline of any oral solicitation.

Third through fifth grade students in the [redacted] will be the subjects of study. Data used will be archived and subjects will be anonymous.

What steps will be taken to ensure that each subject's participation is voluntary?

No steps will be taken as the district collects STAR Reading, Mathematics, attendance, and socioeconomic data.

What if any inducements will be offered to the subjects for their participation?

No inducements will be offered to students to participate.

How will you ensure that the subjects give their consent prior to participating? Will a written consent form be used? If so, include the form. If not, explain why not.

No consent is required for this study. All data is archived, therefore no inducements will be offered.

Will any aspect of the data be made a part of any permanent record that can be identified with the subject? If so, please explain the necessity.

No aspect of the data will be identified with any subjects.

Will the fact that a subject did or did not participate in a specific experiment or study be made part of any permanent record available to a supervisor, teacher or employer? If so, explain.

Data generated for this study will not be used for any other purposes. No names or other identification will be available to identify the subjects in the study. The data will be stored on a password-protected flash drive, which will be kept in a locked drawer. The data will be stored for one year. Afterwards, the data will be destroyed.

What steps will be taken to ensure the confidentiality of the data? Where will it be stored? How long will it be stored? What will be done with it after the study is completed?

All subjects involved in the study will remain anonymous. Data will be stored in a password protected Microsoft Excel spreadsheet only accessible to the researcher. The data will be stored for three years before it will be deleted and destroyed.

If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subjects or society?

No risks are involved with this study.

Will any data from files or archival data be used? If so, please describe.

Archival data will be used for this study. Data from STAR Reading and Mathematics and SIS will be downloaded and imported into IBM® SPSS® Faculty Pack 22 for Windows.

Appendix C: IRB Letter of Approval

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Baker University Institutional Review Board

August 1, 2016

Dear Timothy Winkelmann and Dr. Edwards,

The Baker University IRB has reviewed your research project application and approved this project under Exempt Status Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Please be aware of the following:

1. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
2. Notify the IRB about any new investigators not named in original application.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents of the research activity.
4. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.
5. If the results of the research are used to prepare papers for publication or oral presentation at professional conferences, manuscripts or abstracts are requested for IRB as part of the project record.

Please inform this Committee or myself when this project is terminated or completed. As noted above, you must also provide IRB with an annual status report and receive approval for maintaining your status. If you have any questions, please contact me at CTodden@BakerU.edu or 785.594.8440.

Sincerely,

Chris Todden EdD
Chair, Baker University IRB

Baker University IRB Committee
Verneda Edwards EdD
Sara Crump PhD
Erin Morris PhD
Scott Crenshaw