

UNDER WHICH CONDITIONS DOES READING ATTITUDE
MOST INFLUENCE READING ACHIEVEMENT?

A Dissertation
Submitted to
the Temple University Graduate Board

In Partial Fulfillment
of the Requirements for the Degree
DOCTOR OF PHILOSOPHY

by
Nicholas Robert Hood
July 2015

Examining Committee Members:

Dr. Julie Booth, Advisory Chair, Psychological, Organizational, and Leadership Studies

Dr. Joseph DuCette, Psychological, Organizational, and Leadership Studies

Dr. Michael W. Smith, Literacy Education

Dr. Frank Farley, Psychological, Organizational, and Leadership Studies

Dr. Vivian Ikpa, External Member, Educational Leadership

©
Copyright
2015

by

Nicholas Robert Hood
All Rights Reserved

ABSTRACT

Reading is an essential skill for academic and workforce success; however, recent data-driven accountability initiatives have led to schools' overreliance on reading achievement data for tracking and placement purposes. Such limited data do not give a comprehensive representation of the reader, and instructional decisions based on this narrow view can undermine students' motivation and weaken achievement. Attitude has been associated with achievement, but using reading attitude data could be more useful if the relationship between reading attitude and reading achievement were better understood.

This study sought to expand on the reading attitude-reading achievement relationship by exploring specific teacher and student gender related conditions. The study culminated in investigation of the strength of the relationship between reading attitude and reading achievement for girls and boys with gender matched and unmatched teachers. The findings revealed that reading attitude only predicted reading achievement for students with gender matched teachers. The strongest link was for boys taught by male teachers.

This dissertation is dedicated to my beautiful wife, Tanya,
and my loving parents, Margaret and Robert.

Thank you for always supporting me and believing in me.

ACKNOWLEDGMENTS

I would like to thank all the people who have helped me down this long and winding road. I am especially grateful for the patience and support of my advisor, Dr. Julie Booth. Thank you for enduring years of questions and always pointing me in the right direction. I appreciate the time and effort you have given me. I would also like to thank my dissertation committee members: Dr. Joseph DuCette, Dr. Michael W. Smith, Dr. Frank Farley, and Dr. Vivian Ikpa. I have enjoyed working with you and I have always valued your expertise and feedback.

Many people helped me along this road, but this dissertation would not have been possible without the help and support of Derek Peiffer, Jenn Bubser, and all my coworkers. So many of the people with whom I have taught for the past ten years have supported me either directly or indirectly. It was a blessing to teach in such a supportive environment. I will truly miss the place where great things happen every day.

I am also especially grateful to all of my students who regularly asked me, “Are you a doctor yet?” – you unknowingly motivated me to keep going. Adria, Lauren, Ryan, Jared, and others – you have always made me so proud, and I hope you know the positive impact you have had on me. Thank you for pushing me and holding me to the same standards I nagged you about for so many years.

Finally, thank you to my family. I could not be luckier to be a Hood and a Gabriel.

TABLE OF CONTENTS

	Page
ABSTRACT.....	iii
DEDICATION.....	iv
ACKNOWLEDGMENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTER	
1. INTRODUCTION	1
Statement of the Problem.....	7
Research Questions.....	7
2. REVIEW OF LITERATURE	9
Introduction.....	9
Attitude	10
Functions of Attitude	11
Empirical Findings.....	14
Intentions and Behaviors.....	14
Attitude and Intentions.....	15
Attitude and Behavior	16
Summary	17
Reading Attitude	17
Models of Reading.....	18

Mathewson	18
Ruddell and Speaker	19
McKenna.....	20
Elementary Reading Attitude Survey	24
Reading Attitude and Reading Achievement.....	25
Summary	27
Gender and Reading.....	27
Summary	30
Role Models	31
Conclusion	33
3. METHODOLOGY	35
Participants.....	35
Measures	37
Reading Attitude	37
Reading Achievement.....	38
Procedures.....	39
Data Analysis	41
Summary of Research Questions	43
4. RESULTS	44
Survey Data.....	45
Research Question 1	46
Research Question 2	47
Research Question 3	47

Research Question 4	48
Research Question 5	50
Research Question 6	50
Research Question 7	51
5. DISCUSSION	56
Summary of Results	57
Research Question 1	57
Research Question 2	58
Research Question 3	59
Research Question 4	60
Research Question 5	61
Research Question 6	61
Research Question 7	61
Conclusions.....	66
Implications for Schools	67
Recommendations for Future Research	68
Limitations	70
REFERENCES	72
APPENDICES	
A. PERMISSION TO USE DATA.....	86
B. ELEMENTARY READING ATTITUDE SURVEY.....	87

LIST OF TABLES

Table	Page
1. Student Sample Subgroups	37
2. Summary of Research Questions.....	43
3. Differences of Academic and Recreational Reading Attitudes of Girls and Boys.....	47
4. Difference of Academic and Recreational Reading Attitudes of Students with Male and Female Teachers.....	48
5. Correlation Matrix and Descriptive Statistics for Academic and Recreational Reading Attitudes and Reading Achievement.....	49
6. Regression Analysis of Reading Achievement on Recreational Reading Attitude.....	49
7. Regression Analysis of Reading Achievement on Student Gender and the Interaction of Student Gender with Recreational Reading Attitude.....	50
8. Regression Analysis of Reading Achievement on Teacher Gender and the Interaction of Teacher Gender with Recreational Reading Attitude.....	51
9. Regression Analysis of Reading Achievement on Student- Teacher Gender Matching and the Interaction of Gender Matching with Recreational Reading Attitude.....	52
10. Regression Analysis of Reading Achievement on Recreational Reading Attitude for Unmatched Students.....	52
11. Regression Analysis of Reading Achievement on Recreational Reading Attitude for Matched Students.....	53
12. Regression Analyses of Reading Achievement on Recreational Reading Attitude for Matched and Unmatched Girls.....	54
13. Regression Analyses of Reading Achievement on Recreational Reading Attitude for Matched and Unmatched Boys	54
14. Correlations for Reading Attitudes and Reading Achievement by Student Group	55

LIST OF FIGURES

Figure	Page
1. Distribution of Mean Scores per Academic Reading Attitude Item	45
2. Distribution of Mean Scores per Recreational Reading Attitude Item	46

Under which conditions does reading attitude most influence reading achievement?

Nicholas R. Hood

Temple University

CHAPTER 1

INTRODUCTION

For school age students, the ability to read is an essential and cornerstone skill. The importance of reading goes well beyond reading and language arts classes. Proficient reading skills can assist students in other content area courses. As a result, reading proficiency is a strong predictor of academic success in all subject areas throughout K-12 education (Hoffert & Sandberg, 2001). Conversely, the negative effects of poor reading comprehension, including struggling in content area courses (Battin-Pearson, Newcomb, Abbott, Hill, Catalano, & Hawkins, 2000), can be the tipping point for dropping out of high school (Kamil, 2003). In fact, most student dropouts report poor reading comprehension as a primary reason for dropping out of school. Considering that recent national statistics have shown that about one out of four students will drop out of high school (National Center for Education Statistics, 2013), addressing poor reading comprehension is of utmost importance. Reading skills are also vital for life after high school, including post-secondary schooling and the workforce (ACT Inc., 2006). Emerging professions of the 21st century will have far greater literacy demands than professions of past decades (Barton, 1999), so contemporary students must be well equipped for reading in order to achieve success beyond high school.

Although recent efforts to increase reading proficiency have focused on the nation as a whole, reading achievement gaps persist, especially in the elementary and middle school levels. Data collected since 1992 show slow progress in reading comprehension of fourth and eighth grade students (National Center for Education Statistics, 2013), yet the same findings show that boys are lagging behind girls at each grade level. The existence

of an achievement gap in the U.S. for boys in reading can be traced back for decades (National Center for Education Statistics, 2013). Factors influencing the reading achievement gap are complex and not completely understood. Explanations of the root cause of the gap differ. Some researchers contend that since differences between girls' and boys' feelings toward reading could contribute to differences in achievement, the connection between affective factors and achievement should be further investigated (Afflerbach & Cho, 2011). Researchers may never know the exact cause of the reading achievement gap; however, a deeper understanding about the relationship between affective factors and achievement may prove to be valuable to help advance all struggling readers, including boys.

Achievement gaps are common in today's educational landscape. As a result, a shift in legislative emphasis on education has prompted researchers and educators to focus on decreasing achievement gaps (NCLB, 2001). This reform policy has highlighted the use of accountability systems and intensified the practice of data-driven decision-making. Consequently, schools have increased the tracking of student reading data (Stringfield, Wayman, & Yakimowski-Srebniak, 2005). Schools have been attempting to use information from student data for instructional decision-making; however, the range of reading data collected is often narrow. Many schools are too dependent on reading achievement data collected from mandated high-stakes assessments (Darling-Hammond, 2004). Such limited data do not give a comprehensive representation of the reader (Afflerbach & Cho, 2011) and instructional decisions based on this narrow view can undermine students' reading motivation and ultimately weaken achievement (Paris, Lawton, Turner, & Roth, 1991).

In many cases, school districts align reading objectives with state-mandated reading standards (Simpson, Hynd, Nist, & Burrell, 1997). This alignment often limits the instructional focus to restricted topics in reading, such as main ideas, context clues, and drawing inferences (Simpson, Stahl, & Francis, 2004). The resulting instructional reading practice for students frequently resembles state reading exams. For example, state tests often provide students with decontextualized expository or narrative passages followed by multiple-choice questions (Nist & Holschuh, 2000). This practice may temporarily increase reading test scores, but since high-stakes tests (and the practice students undergo for them) rely on students' extrinsic motivation, researchers have warned that such tests could damage students' intrinsic motivation to read (Kellaghan, Madaus, & Raczek, 1996). Theorists have argued that it is critical for schools to foster the act of reading for intrinsic purposes (Castle & Cramer, 1994). Researchers have supported this claim by demonstrating that reading for intrinsic purposes can positively influence achievement. For example, researchers have linked affective factors such as reading for enjoyment (Chiu & McBride, 2006), reading motivation (Wigfield & Guthrie, 1997) and reading attitude (McKenna, 1994) with reading achievement.

This suggests that factors other than cognitive and instructional issues influence achievement and may help increase achievement and close achievement gaps (Zins, Bloodworth, Weissberg, & Walberg, 2004). Consequently, collecting and interpreting reader data other than achievement scores can help develop readers more comprehensively than focusing on achievement alone (Afflerbach & Cho, 2011). Since many affective processes are in operation before, during, and after the act of reading, assessing affective characteristics of readers can provide valuable insight (Verhoeven &

Snow, 2001). Knowing which affective factors to measure depends on establishing a link between the factors and reading achievement. One factor already linked to achievement is reading attitude (Baker & Wigfield, 1999; McKenna, Kear, & Ellsworth, 1995; Wigfield & Guthrie, 1997); however, researchers have not clearly established the conditions in which attitude most influences achievement. In particular, researchers have not investigated whether the gender of the student, the gender of the teacher, or the interaction between them affects the relationship between reading attitude and achievement. This lack of clarity may help to explain why schools do not regularly track or use reading attitude data. This is in contrast to the recommendations of Afflerbach and Cho (2011), who warned that instructional practices related to increasing reading achievement frequently underestimate the influence of affective factors, such as attitude. They explained, “Given the potential power of affect to influence reading development, assessment of affect should be a priority” (p. 498). Educators who ignore reading attitude are neglecting a critical affective component of contemporary reading models (Fredericks, Blumenfield, & Paris, 2004).

While collecting reading attitude data may assist schools to understand readers from a more complete perspective, decisions based on such data may not be practical without further research. Expanded research in this area should focus on helping schools meet the needs of readers. A specific interest to schools may be the placement of students. Achievement is often the key variable for placement of students and matching with teachers. In fact, researchers have found that while schools often attempt to group students randomly, various factors frequently result in classes grouped by prior academic achievement (Dieterle, Guarino, Reckase, & Wooldridge, 2012). Although empirical

evidence has not supported the effectiveness of grouping by reading ability (Slavin, 1987), many schools still follow such practices (Schofield, 2010). Incorporating variables other than achievement into the decision-making process may lead to placements that are more effective. For example, schools could place students based on their reading attitude. Student-teacher matches based on a student's reading attitude instead of reading achievement could provide better conditions for optimal achievement. A student could be placed with a male or female teacher depending on the student's reading attitude. For instance, if a particular student-teacher gender combination shows a strong positive correlation between reading attitude and reading achievement, then schools could avoid placing students with a negative attitude into such conditions. An improved understanding of the reading attitude-reading achievement relationship may help to match students with teachers for better educational outcomes.

Recall that there is an existing reading gap between girls and boys in reading achievement. Researchers have found that the gender of the student and the gender of the teacher could be contributing factors. For example, researchers have found that not only do girls have higher reading achievement, they also have more positive reading attitudes (McKenna, Kear, & Ellsworth, 1995). Researchers have also demonstrated that the gender of the teacher can influence student beliefs about specific subject areas (Tyler-Wood, Ellison, Lim, & Periathiruvadi, 2012), attitudes (Shapiro, 1980), and performance (Nixon & Robinson, 1999; Shinedling & Pederson, 1970). Despite such findings, Dee (2005) believes the characteristics of teachers and students and the interaction between them are often overlooked. He claimed that the match between student and teacher characteristics, including gender, has substantial consequences on student achievement.

He explained, “Future research that illuminates the nature of these student-teacher dynamics will provide a particularly useful guide to sensible public policy” (p. 164).

Dee (2007) also claimed that “assignment to a same-gender teacher significantly improves the achievement of both girls and boys...and student engagement with the teacher’s subject” (p. 528). While such bold claims may be true, Dee added that he does not “suggest that the gender-based segregation of students and teachers would be a desirable policy” (p. 551). Instead, he argues that his findings merely “indicate that the gender interactions between students and teachers constitute a quantitatively important environmental determinant of the comparative educational outcomes of both girls and boys” (p. 551). This research was an exploration of Dee’s latter argument that the gender of the teacher and student are relevant educational factors.

This research attempted to use variables such as reading attitude, reading achievement, gender of the student, and gender of the teacher to clarify the conditions under which reading attitude is related to reading achievement. The first goal of this research was to replicate findings that there are gender differences between reading attitude and reading achievement. The second goal was to replicate findings that reading attitude is correlated with reading achievement. The third and primary goal of this study was to determine under which conditions, related to the gender of the student and gender of the teacher, reading attitude most correlates with reading achievement. While researchers have explored various aspects of the attitude-achievement relationship, they have not closely examined the relationship between them with regard to the gender of the teacher and student. A better understanding of the reading attitude-achievement relationship could help schools use reader data other than achievement scores to put

students in the best possible classroom settings to be successful. Identifying which student-teacher pairings produce the highest levels of reading attitude and reading achievement could allow schools to utilize non-achievement data to assist in the placements of boys and girls to maximize reading attitude and achievement.

Statement of the Problem

The primary goal of this research was to determine under which conditions, related to the gender of the student and gender of the teacher, reading attitude most correlates with reading achievement. To address this goal, this study first attempted to replicate findings that there are gender differences in reading attitude and reading achievement. This study also attempted to replicate findings that reading attitude predicts reading achievement. This research expands on the reading attitude-reading achievement relationship by exploring specific teacher and student gender related conditions. This study sought to answer the following questions, which were divided into two types: gender differences and predicting reading achievement.

Research Questions

Gender Differences

1. What gender differences exist in reading attitudes for middle school students?
2. What gender differences exist in reading achievement for middle school students?
3. Do students' reading attitudes differ when they have male versus female reading teachers?

Predicting Reading Achievement

4. Does reading attitude predict reading achievement for middle school students?
5. Does reading attitude predict reading achievement differently for girls and boys?

6. Does reading attitude predict reading achievement differently for students with male and female teachers?
7. Does reading attitude predict reading achievement differently for students with same-gender teachers?

CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

The purpose of this study was to identify under which conditions reading attitude most influences reading achievement. For decades, social and educational psychologists have shown great interest in attitude and the influence of attitude on behavior and achievement. An understanding of the development of the theories of attitude and the progression of the research grounded in such theories is important because it has strong implications for reading research. Attitude plays a critical role in the reading process. Reading researchers have often adjusted their views of reading attitude to match the prevailing scientific views of attitude. Consequently, as theories of attitude changed, so has the representation of reading attitude in prominent reading models. An awareness of both the development of attitude research and research about the reading process can help to better understand current beliefs about the role attitude plays in the reading process. This collection of relevant literature includes theories and empirical findings related to attitude, the role of affective factors including attitude in models of reading, and the empirical findings related to the relationship between affective factors and reading achievement. Following the review of these components of literature, I examine the extant literature regarding the roles of gender and same-gender role models on reading achievement and attitude. Relevant literature includes findings about reading differences between girls and boys and the findings about the influence of same-gender role models on attitude.

Attitude

Allport (1935) famously labeled attitude as "the most distinctive and indispensable concept in contemporary American social psychology" (p. 798) and argued that investigating attitudes would allow researchers to better understand the tendencies and behavior of individuals, groups, and cultures. More recently, prominent social psychologists Eagly and Chaiken (1993) reiterated that sentiment by explaining, "Understanding how people's attitudes cause them to behave is thus an essential part of the shared mission of all psychologists, which is understanding the causes of behavior" (p. 216). In recent decades, attitude is one of the most studied topics in the field of psychology and has been researched in a wide variety of domains (Maio & Haddock, 2009). Due to the breadth of such examination, researchers have conceptualized and defined attitude in a multitude of ways; however, many definitions include the tripartite view that attitudes are an integration of affective, behavioral, and cognitive processes (Fazio & Olson, 2003). There are also conceptual differences about the acquisition of attitudes. Some have argued that attitudes are learned (Allport, 1935; Campbell, 1963; Fishbein & Ajzen, 1975), while others believe attitudes have an unlearned component (Eagly & Chaiken, 1993; McGuire, 1985). In either case, most researchers agree that attitudes are attained over time (Rajecki, 1990). Allport (1935) defined attitude as "a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related" (p. 810). Although his definition is still relevant today, other researchers have attempted to modernize it. For example, contemporary social psychologists Eagly and Chaiken streamlined the definition of attitude as "a psychological tendency that is

expressed by evaluating a particular entity with some degree of favor or disfavor” (1993, p. 1).

Functions of Attitude

In their model of their theory of reasoned action (TRA), Fishbein and Ajzen (1975; see also Ajzen & Fishbein, 1980) attempted to explain volitional behaviors by modeling the pathways from attitudes to behavior. Their model consisted of an attitudinal component and a normative component. They argued that because humans are rational beings who actively use information available to them before making behavioral decisions, an individual’s behavioral beliefs, including those from normative beliefs and personal experience, form one’s attitude. They described attitude formation as an affective evaluative process in which one’s set of behavioral beliefs toward an object or behavior is converted into “a learned predisposition to respond in a consistently favorable or unfavorable manner” toward the given object or behavior (p. 6). This component of the model is consistent with the expectancy-value principle that assumes that an individual’s salient beliefs about the expected outcomes of a given behavior and the value the individual places on those outcomes affect whether the behavior is positively or negatively valued (Wigfield & Eccles, 1992). This value ultimately determines the individual’s attitude toward the behavior. Additionally, Fishbein and Ajzen believed that normative beliefs, including the individual’s perceptions of norms and social pressure, along with the motivation to comply with others’ expectations, determine one’s prevailing subjective norms. Attitude and subjective norms independently and additively influence one’s behavioral intention, or willingness, to perform a behavior (Fishbein & Ajzen, 1975).

Fishbein and Ajzen described behavioral intentions as the “immediate antecedents of corresponding overt behaviors” (Fishbein & Ajzen, 1975, p. 382) and claimed that behaviors under a person’s volitional control could be reliably predicted by their intentions. The strength of one’s intentions is an indication “of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior” (Ajzen, 1991, p. 181). In general, the stronger an individual’s intention to perform the behavior, the more likely the individual will carry it out. While attitude and subjective norms determine an individual’s intention, the relative importance of each depends on the nature of the individual and behavior involved. Although Fishbein and Ajzen contended that intentions always precede behavior, their view also highlighted the role of consistency of one’s intention toward a behavior. Their principle of aggregation stated that intentions are “related only to the total behavioral pattern” and do not “predispose the person to perform any specific behavior” (1975, p. 15). They predicted that high correlations would only be found between intentions and the aggregation of broadly related behaviors, not single behaviors. To improve the prediction of behavior, Ajzen and Fishbein (1977) suggested the following about the correspondence and compatibility between attitude and behavior:

An investigator attempting to explain a certain phenomenon in terms of an attitudinal analysis must first define the behaviors of interest, the targets at which they are directed, and the context and time of their occurrence. Measures of attitude will serve to explain the behaviors to the extent that they involve identical target, action, context, and time elements. (p. 914)

They advised investigators that failure to follow their research principles would produce compromised results.

In his review of the Fishbein-Ajzen model, Liska (1984) agreed with the conceptual distinctions of beliefs, attitude, and intentions, but claimed that the model was too parsimonious. He disagreed with the assumption that intentions are the sole direct cause of behavior and argued that Fishbein and Ajzen overlooked key influences of behavior. Liska believed that because intentions are often unstable and poorly formed, they are neither sufficient nor necessary to explain many behaviors. He suggested that attitude and subjective norms are more predictive of behavior than intentions. Additionally, he did not agree that their effects were always causally independent. He argued that since attitude and subjective norms “are affected by similar social experiences and that they affect each other” (p. 69), their influence on behavior could be independent, additive, or interactive. While Liska did not deny some direct influence of subjective norms on behavior, he argued that normative beliefs primarily influence behavior by reinforcing attitude. The strength of normative influence depends on various contingency variables, such as adequate skill proficiency and environmental factors. For example, attitude will be demonstrated behaviorally only if the individual has the skill to carry it out and the social climate supports it. Liska’s revision of the Fishbein-Ajzen model resulted in a more complex model that reflected Fishbein and Ajzen’s belief that attitude influences behavior through intentions and his assertion of the direct influence of attitude on behavior.

More recently, researchers have tried to refine further the Fishbein-Ajzen and Liska models by investigating the normative component of the models. Terry and Hogg (1996) argued that neither model correctly considered an individual’s social identity and self-categorization on the influence of social norms. Each model depicted subjective

norms as the perceived social pressure from all significant others. Terry and Hogg hypothesized that only norms from specific, behaviorally relevant groups would influence intentions and that the strength of identity an individual feels with a reference group would determine the amount of influence from that group's norms. Their research supported their claims when they found that "the effects of the perceived norms of a behaviorally relevant reference group on behavioral intentions were evident only for people who identified strongly with the reference group" (p. 790). Their findings support their reconceptualized role of subjective norms in the Fishbein-Ajzen and Liska models.

Empirical Findings

Findings from studies of the theory of reasoned action are complicated. While many of the early findings did not support the theory, they also highlighted methodological inconstancies that may have led to weakened results. Additionally, much like the way intentions, attitudes, and behaviors were debated and revised in parts, researchers have studied the theory by its components. Taken together, these studies have not only helped to validate the theory, they have also helped to confirm Fishbein and Ajzen's recommendations about their principle of correspondence and compatibility for studying attitude and behavior. A selection of relevant studies is included below.

Intentions and behaviors

Research findings have supported Fishbein and Ajzen's position that intentions predict volitional behaviors. In a meta-analysis of 87 studies, Sheppard, Hartwick, and Warshaw (1988) investigated the relationship between intention and behavior. They found a mean correlation of $r = .53$. They described their findings as "strong support for the overall predictive utility of the Fishbein and Ajzen model" (p.33) and determined that

the model “performed extremely well in the prediction of goals and in the prediction of activities involving an explicit choice among alternatives” (p. 338). Kim and Hunter (1993a) had similar findings. They conducted a meta-analysis and found a correlation of $r = .46$; however, they found methodological and measurement errors had weakened findings. For example, they found that intention and behavioral measures were artificially dichotomized to yes-no items. Measurement errors and unreliable measures also weakened results in multiple studies. When corrected for dichotomization of variables and measurement errors, the authors found an intention-behavior correlation of $r = .82$. Results from meta-analyses demonstrated that behavioral intentions and volitional behaviors are related. Accounting for methodological and measurement errors strengthens support for this relationship.

Attitude and intentions

Evidence has supported the influence of attitude on behavioral intentions. Kim and Hunter (1993b) conducted a meta-analysis of 92 studies measuring the relationship between attitude and behavioral intentions. They found a mean correlation of $r = .65$. The researchers determined methodological errors attenuated the findings of multiple studies. They investigated the correspondence between measures of attitude and behavioral intention and found that the more the measures corresponded, the higher they were correlated. While the correlation between measures with low correspondence was $r = .46$, correlation between measures with high correspondence was $r = .69$. The authors found additional measurement errors and unreliable measures in many studies. When such the measurements were corrected, studies with high correlation between attitude and behavioral intentions had a mean correlation of $r = .87$.

Attitude and behavior

Research findings on the relationship between attitude and behavior have been inconsistent. Early findings showed weak correlations between attitude and behavior. Wicker (1969) reviewed 47 relevant studies and argued that the findings “suggest that it is considerably more likely that attitudes will be unrelated or only slightly related to overt behaviors than that attitudes will be closely related to actions” (p. 65). His findings revealed that correlations between attitude and behavior were most often less than $r = .30$. Although he acknowledged differences among researchers' conceptions of attitude, flaws with methodologies, and measurement issues, he concluded that the research provided “little evidence to support the postulated existence of stable, underlying attitudes within the individual” (p. 75). Wicker's analysis may have provided the impetus for theorists and researchers to reassess the issues of researching attitude and behavior.

Ajzen and Fishbein (1977) believed attitude and behavior inconsistencies were predominantly a problem with methodology and measurement. They reviewed 109 studies, including some that were reviewed by Wicker. They found that all 26 studies that displayed high levels of attitude-behavior correspondence and used appropriate measures had correlations greater than $r = .40$. In contrast, none of the 27 studies with low correspondence yielded correlation at or above $r = .40$. Kraus (1995) found similar results. To evaluate the direct relationship between attitude and behavior, he conducted a meta-analysis of 88 studies that were not included in the Wicker or Ajzen-Fishbein investigations. Overall, he found a mean correlation of $r = .38$. However, he also found that Fishbein and Ajzen's principles were not applied in many of the studies. He found that while only eight of the studies had high attitude-behavior correspondence, 29 of the

studies had little to no correspondence between attitude and behavior. When he reassessed the eight studies with high correspondence of specificity between attitude and behavior, the mean correlation was $r = .54$. The Ajzen-Fishbein and Kraus studies acted to preserve the utility of attitude and behavior research and highlighted the need for methodological and measurement consistency.

Summary

Attitude is a central variable in the attempt to understand behavioral tendencies. For decades, the prevailing view has been that attitudes are a blend of affective, behavioral, and cognitive processes; however, an explanation of how attitudes influence behavior has been the subject of debate. Fishbein and Ajzen explained the path from attitude to behavior with their theory of reasoned action. While their model was critiqued and revised, research has generally supported their theoretical framework and helped to confirm Fishbein and Ajzen's recommendations of how to study the influence of attitudes. When applied correctly, TRA has strong predictive utility. Because of its utility, TRA has been applied to specific fields, including reading.

Reading Attitude

Educational researchers and practitioners have shown interest in the role attitude plays in educational contexts. Because attitude relates to a wide assortment of topics within education, it is important to contextualize the definition of attitude for specific purposes. With regard to reading, Alexander and Filler (1976) describe attitude as “a system of feelings related to reading which causes the learner to approach or avoid a reading situation” (p. 1). Understanding how reading attitude develops and clarifying under which conditions students are most likely to develop a positive reading attitude are

essential factors for informing instructional practice (McKenna, 2001). Numerous models of reading development have emphasized cognitive factors that are crucial for reading success (e.g. Just & Carpenter, 1987; Rayner & Pollatsek, 1989); however, since reading is a complex activity that requires an intentional choice and sustained effort by the reader, having the cognitive ability to read does not ensure engagement. Consequently, a collection of models has emerged to help conceptualize the development and role affective factors, including attitude, play during reading development.

Models of Reading

Mathewson

Mathewson (1985, 1994) proposed a model of reading wherein affective and cognitive factors interact during the reading process. His model focused on attitude as a causal factor during each act of reading. Mathewson suggested the tripartite view that a reader's attitude toward reading is comprised of three aspects: "evaluations of content and purpose, feelings about engaging in a particular kind of reading, and action readiness for initiating or sustaining reading activity" (p. 1136). Shaped by the work of Fishbein and Ajzen, Mathewson believed that the formation of intentions always preceded the act of reading. Therefore, his model designated attitude toward reading as a contributor toward the reader's intention to read, but not to the act of reading directly. Mathewson explained the model's omission of a direct path from reading attitude to reading behavior was because a positive attitude toward reading "only results in reading if other influences favoring formation of positive intentions to read are present" (p. 1135). He described these other influences as a reader's external motivators and internal emotional state. Such factors also influence an individual's intention to read or to continue reading. External

motivators, including normative beliefs, must be in harmony with attitude to ensure the intention to read. For example, a reader with a positive attitude toward reading will not follow through on the intention to read if behavioral expectations from a peer reference group are to avoid reading. Internally, the reader must be in a compatible emotional state to actively make meaning from text; therefore, being in an incompatible emotional state could inhibit comprehension of the text or sway the reader's intent away from reading altogether.

Mathewson also addressed other factors that guide the formation of attitude toward reading. Persuasive communications affect reading attitude through direct and indirect routes. Direct persuasive communications could come from a teacher or parent advocating reading. Indirect persuasive communications are simpler and less permanent. For example, an interesting book cover may evoke positive feelings toward a book. Cornerstone concepts, such as personal values, goals, and self-concept contribute directly to the development of a reader's attitude. For instance, if a reading experience helps move the reader closer to a set goal, the reader will be more likely to have a favorable attitude about reading. Additional feedback from each reading experience and the ideas developed through each reading help to revise cornerstone concepts. Therefore, satisfaction from a reading experience will positively affect the reader's attitude. The cumulative effects of reading experiences help determine a reader's attitude.

Ruddell and Spieker

Ruddell and Spieker (1985) also addressed affective factors in a comprehensive model of the reading process that focused on construction of meaning from reading. Their model consisted of four components: reader environment, knowledge utilization,

declarative and procedural knowledge, and reader product. Affective factors are directly represented in the knowledge utilization and reader product components. The knowledge utilization component includes interaction between affective, cognitive, and metacognitive factors. Affective factors help to prime a reader for the cognitive demand of reading. For example, the authors explained that affective factors such as a reader's attitude, interests, and values "establish the reader's goal direction and expectations for content....With less interesting text or text judged to be of little importance, the reader will be less persistent, and limited processing will occur" (Ruddell & Speaker, 1985, p. 757). During reading, the reader's affective state can be adjusted by using a "metacognitive evaluation of the fit between the goals and the expectations of the affective state" (p. 774). These changes are represented in the reader product component of the model. Among the potential changes are the beliefs that underlie the reader's affective and cognitive states. Thus, a reader's affective state adjusts during each act of reading through continuous monitoring and evaluation. Similar to Mathewson, the collective feedback from each act of reading gradually changes a reader's attitude over time.

McKenna

In an attempt to model the long-term development of reading attitude, McKenna (1994, 2001) examined the role of attitude in the Mathewson and Ruddell-Speaker reading models. He concluded that while each advanced the theoretical understanding of the role attitude has on reading, each had limitations. McKenna argued that "because both models focus on an individual act of reading, they are limited in their power to explain the affective impact of environmental factors that transcend the immediate act of reading

context” (1994, p. 24). Therefore, neither was appropriate for explaining long-term reading attitude development. McKenna, Kear, and Ellsworth (1995) found two additional flaws with the Mathewson model. First, although the model depicts that normative beliefs influence intention, “the model is silent as to the possibility that social norms may have a direct effect on attitude” (p. 938). Second, the model accounts for the reader’s “beliefs *within* the concept of attitude itself, but does not postulate a causal relationship between beliefs and feelings” (p. 938, original emphasis). These conclusions directed McKenna to propose a model of reading attitude acquisition.

McKenna (1994) synthesized the theoretical underpinnings of Fishbein and Ajzen’s theory of reasoned action model and Liska’s modifications with components of the Mathewson and Ruddell-Speaker reading models to create a model representing the long-term development of reading attitude. While McKenna retained Mathewson’s view that the choice to read is a consequence of reading attitude, normative beliefs, and intention, he also believed that each factor had specific reading related contingencies. For example, reading attitude could depend on the reader’s purpose for reading. Such contingencies created a more dynamic representation than the Mathewson model. McKenna was guided by Fishbein and Ajzen’s explanation of the causal relationship between beliefs and attitude. Consequently, McKenna hypothesized that the practice of introducing new normative and behavioral beliefs and challenging old beliefs about reading was essential for the shaping of reading attitude.

McKenna rejected Mathewson’s three aspects of reading attitude. Instead, McKenna distinguished the three primary factors that influence the development of reading attitude as: “(a) the direct impact of episodes of reading, (b) beliefs about the

outcomes of reading, and (c) beliefs about the cultural norms concerning reading (conditioned by one's desire to conform to those norms)" (2001, p. 139). He predicted that each factor affects reading attitude over an extended time and that the influence of the three factors is continuing and cumulative. Each episode of reading directly affects the reader in small, but meaningful ways. Direct effects involve the immediate change of attitude without the "cognitive mediation of belief change" (McKenna, 1994, p. 35). Depending on the satisfaction of the reading experience, the effects may be to strengthen the current attitude or to modify it. In addition, the effects may change the reader's attitude at specific and general levels. If an individual enjoys reading an unfamiliar genre, the reader's positive change in attitude toward that genre could be sizeable, while the change in overall reading attitude could be marginal.

Consistent with Ruddell and Speaker, McKenna suggested that personal expectations of each episode of reading have an indirect influence on reading attitude. Based on experience, a reader will have expectations of success or failure and pleasure or boredom. The reader then anticipates whether reading will be a positive or negative experience, in isolation and in comparison to competing activities. After reading, the reader evaluates and compares the actual outcomes to the expected results. This recurring process leads to incremental changes in the reader's beliefs about the outcomes and expectations of reading. Since this aspect of reading attitude development is based partially on reading experience, reading attitude and ability are predicted to have bidirectional influence from the earliest reading experiences (McKenna et al., 1995). Better readers would be more likely to face satisfying reading experiences, which lead to positive expectations and contribute to a more positive reading attitude.

Normative beliefs also influence reading attitude in the McKenna model. Social and cultural factors guide an individual's beliefs about the value significant others place on reading. Through socialization, parents and family members typically provide the first influences of norms, but as children age, the range of social and cultural influences widens beyond family. School and peer groups may also affect beliefs. As Terry and Hogg (1996) demonstrated, a reference group's norms may guide behavior if an individual strongly identifies with the group. Concurrent membership in multiple groups (such as family and peers) make the process more complex; however, "the more attractive a group is to a member, the more important that group will be as a comparison" (Festinger, 1954, p. 131). If an individual strongly identifies with a peer group and the peer group regularly expresses that reading is uninteresting, the individual may adopt the same belief. Because most school-aged readers strongly identify with their own gender, beliefs about the expectations and attitude associated with reading and being male or female help to form one's reading attitude (Smith, 1990).

The direct and indirect influence of personal beliefs, social beliefs, and reading experiences help to develop reading attitude over time. McKenna predicted that the collective effects of such factors would help guide three general attitudinal trends among readers. First, a reader's attitude toward reading will become more negative over time, especially for poor readers. Second, since a reader's attitude is accumulated from reading experiences, better readers will have a more positive attitude than poorer readers. Third and most relevant to this study, gender related normative beliefs will influence readers; therefore, girls will have a more positive reading attitude than boys. The empirical evidence has supported each of McKenna's predictions.

The strength of McKenna's model is not only the blend of relevant attitude theories with models of reading, but also its utility. By applying Fishbein and Ajzen's recommendations for correspondence and compatibility to a survey for measuring attitude, the McKenna model of reading attitude acquisition is the basis for reliably measuring reading attitude. Using McKenna's model, McKenna and Kear (1990) developed the Elementary Reading Attitude Survey (ERAS) as a public-domain tool that would measure students' attitudes toward reading. The McKenna model, including the Elementary Reading Attitude Survey, served as the framework for this study.

Elementary Reading Attitude Survey

To study reading attitude successfully, researchers needed a valid and reliable method of measurement. McKenna and Kear (1990) created ERAS from 39 questions from several previously created surveys to assess academic and recreational reading attitudes. After small-scale administrations, the instrument was modified to include two sets of items, ten questions addressing recreational reading attitude and ten questions addressing academic reading attitude. The revised survey yielded an overall reading attitude score and subscale scores for recreational and academic reading attitudes. McKenna, Kear, and Ellsworth (1995) administered the survey to a stratified sample of 18,185 students in grades 1-6 from 229 schools in 38 states. Reliability coefficients for the full scale and two subscales at each grade were between .74 and .89, with 16 of the 18 coefficients measured at least .80. Construct validity was collected by testing groups of participants by variables such as reading habits and reading ability. The authors used the results from national testing to create norm scores for comparison. Researchers have used

the ERAS to investigate McKenna's predictions and the relationship between reading attitude and reader attributes such as age, gender, and reading behaviors.

Not only has the ERAS been used to identify the relationship between reader attributes and reading behaviors, it also has been used to identify overall reading trends over time. For example, researchers have demonstrated that attitude toward reading declines over the elementary school years. In an effort to identify overall reading attitude trends, McKenna, Kear, and Ellsworth (1995) employed the ERAS to a cross-sectional sample of elementary students ($N = 18,185$). The researchers found that for recreational and academic reading, attitude declined between all successive grades. Students in Grade 1 were relatively positive, while students in Grade 6 were comparatively indifferent. Limitations of cross-sectional design led Kush and Watkins (1996) to employ a longitudinal design to identify developmental trends in reading attitude. Using the ERAS, they also found that children's recreational and academic reading attitudes steadily declined through elementary school. Other researchers have found similar results using different measures of reading attitude (Baker & Wigfield, 1999; Barnett & Irwin, 1994; Swanson, 1985). McKenna (2001) concluded that the decline in reading attitude is a result of the combination of negative reading experiences and the increase of competing activities.

Reading Attitude and Reading Achievement

The relationship between reading attitude and reading achievement is well established. Researchers have consistently found a link between positive reading attitude and higher reading achievement (Baker & Wigfield, 1999; McKenna et al., 1995; Wigfield & Guthrie, 1997); and likewise, evidence indicates that negative reading

attitude is most prominent for poor readers (Chapman, Tunmer, & Prochnow, 2000; McKenna et al., 1995). The direction of causality is not clear. While some researchers hypothesized that reading attitude influences achievement (Gerber, Ginsberg, & Reiff, 1992), others have argued that achievement contributes to attitude (Chapman & Tunmer, 1995). Recent evidence has supported a bidirectional relationship in which attitude and achievement interact over time (Kush, Watkins, & Brookhart, 2005; Morgan & Fuchs, 2007). Regardless of the direction of causality, evidence suggests that the relationship develops slowly over time and is not a straightforward association (Morgan & Fuchs, 2007; Stanovich, 1986). For example, Kush, Watkins, and Brookhart (2005) found that while primary grade reading attitude was not a reliable predictor of primary grade reading achievement, both primary grade achievement and attitude were correlated to reading achievement five years later. Although primary grade achievement was the better predictor of later achievement, the researchers explained that attitude toward reading is an important predictor of future achievement. They went on to explain that although “primary reading attitude was unrelated to primary reading achievement, it appears that the causal relationship between reading attitude and reading achievement may be developmental in nature and may be much more of a long-term phenomenon than had been previously thought” (p. 38). Additionally, the authors noted that the relationship becomes “more closely linked as the child matures, developing into important causal determinants of reading achievement by early adolescence” (p. 38). This finding was consistent with McKenna and colleagues (1995) who found that the relationship between reading attitude and achievement grew stronger over time; however, researchers have not explained why the relationship strengthens.

Researchers have explored the reading attitude-achievement relationship by investigating patterns of reading behavior. Evidence has demonstrated that a positive attitude toward reading is linked with higher motivation to read and more frequent reading (Wigfield & Guthrie, 1997), which are correlated to reading achievement and to growth in reading achievement (Elley, 1994). Children with a positive attitude toward reading are more likely to read independently (Sainbury & Schagen, 2004), including spending more time reading for school assignments (Coles & Hall, 2002), and reading for pleasure (Baker & Wigfield, 1999). Such behaviors are linked to higher reading achievement (Chiu & McBride-Chang, 2006; Mullis, Martin, Kennedy, & Foy, 2007).

Summary

Readers need more than cognitive abilities to read successfully. Affective factors also play a role in effective reading engagement. Theorists have incorporated attitude into models of the reading process and researchers have established a strong link between reading attitude and reading achievement. The relationship between them is complex and may be attributable to the influence reading attitude has on reading behaviors. Because of the established link between reading attitude and reading achievement and the influence of reading attitude on reading behaviors, researchers have investigated gender differences of affective factors as an attempt to explain the reading achievement gap between girls and boys. The following collection of related research reviews gender differences in reading.

Gender and Reading

Chiu and McBride-Chang (2006) examined reading achievement data from 15-year-old students from 43 countries around the world, including the US. Their findings

showed that boys were behind girls in reading in every country. The researchers explored the data further in an attempt to find the potentially mediating effects of gender at national, school, household, and individual level variables. Only reading for enjoyment mediated the effects of gender on reading comprehension. The researchers' findings showed that the simple act of reading for enjoyment mediated the effect of gender by 42%. Girls tended to read more often for enjoyment; however, reading achievement was significantly higher for male and female readers who enjoyed reading. They explained that because students who read for non-academic reasons were more likely to perform well on reading comprehension assessments, fostering such reading practices could indirectly improve reading comprehension.

Researchers have suggested that positive reading attitudes and greater frequency of reading may be responsible for girls' higher achievement (Mullis, Martin, Kennedy, & Foy, 2007). Findings have consistently shown that across all grade levels, girls have a more favorable attitude toward reading than boys (Coles & Hall, 2002; Guthrie & Greaney, 1991; Kush & Watkins, 1996; McKenna et al., 1995; Sainsbury & Schagen, 2004). Typically, girls begin school with slightly a more positive reading attitude and since boys' reading attitude tends to decline more rapidly than girls' attitude, the gap widens with age (Kush & Watkins, 1996; McKenna et al., 1995). The greatest difference in attitude is toward recreational reading and reading for enjoyment (Parker & Paradis, 1986; Stevenson & Newman, 1986). In fact, Cloer and Pearman (1993) investigated the reading attitudes of students in grades 4-6 and found that while girls in each grade had significantly more positive recreational reading attitudes, there were no differences between the academic reading attitudes of girls and boys. Their findings were consistent

with other researchers who found that not only do girls report having a better attitude toward recreational reading in general (Kush & Watkins, 1996), girls are more likely to spend time reading outside of school, including engaging in recreational and social reading activities than boys (Coles & Hall, 2002). For example, girls are more likely to participate in social aspects of reading such as visiting the library with friends and discussing books with friends or family members (Coles & Hall, 2002; Marinak & Gambrell, 2008; Millard, 1997). Such differences in reading attitudes and behaviors may be a product of gendered stereotypes and normative beliefs about reading (Shapiro, 1985; 1990).

Children's behaviors are related to their normative perceptions of the social expectations and the gender stereotypes associated with specific subjects (Archer & Macrae, 1991). Identifying activities, including school activities, as masculine or feminine is a standard norming process throughout childhood, but inflated categorization of male and female activities helps form gender-role and gendered stereotypes (Serbin, Powlishta, & Gulko, 1993). While children may participate in gender appropriate activities before they can articulate gendered stereotypes, the acquisition of such stereotypes strengthens normative beliefs about the gender-role appropriateness of an activity, prompting participation in or avoidance of the activity (Dwyer, 1974). Girls and boys prefer gender-typed activities, yet boys are more strict with participation and are more likely to avoid activities they deem to be feminine (Serbin et al., 1993). Whitehead (1996) found that boys choose more gender stereotyped activities because as they get older, they have more of a need to form and reinforce their gender identity than girls. Whitehead's findings are supported by evidence that shows that girls tend to become less

gender-typed throughout elementary school, but boys increasingly prefer masculine activities (Brinn, Kraemer, Warm, & Paludi, 1984). Accordingly, boys become decreasingly motivated to participate in activities they consider to be feminine, including reading (Marinak & Gambrell, 2010).

It is well documented that school age boys identify reading as a feminine activity (Dwyer, 1974; Mazurkiewicz, 1960; Millard, 1997; Stein & Smithells, 1969; Whitfield & Whitfield, 1982). Researchers have suggested that a feminine view of reading may be a result of the school environment (Dwyer, 1974; Kagan, 1964). Findings from various studies support this argument. For example, researchers have found that both girls and boys perceive reading as gender appropriate activity prior to entry to school (May & Olilla, 1981; Shapiro, 1980); however, boys increasingly perceive reading and books as feminine throughout elementary school (McKenna, 1997; Shapiro, 1990). Regardless of the cause, boys' perception of reading as feminine can negatively influence reading attitudes, intentions, and behaviors (McKenna et al., 1995). Shapiro (1980) argued that a lack of male role models to demonstrate reading might influence boys to avoid it.

Summary

Not only do female students have higher reading achievement than boys, there is also solid evidence that girls have more positive attitudes than boys. Positive reading attitude leads to reading more frequently, which could help explain girls' higher reading achievement. Researchers contend that differences in reading attitude could be a product of gendered stereotyping. Boys' negative attitude toward reading could be because they view reading as a feminine activity. Since boys would rather participate in gender appropriate activities, they may avoid reading, especially for recreation. Why boys

perceive reading as a feminine activity is not certain; however, some researchers believe it is due to the lack of male role models, particularly in the school environment.

Role Models

Social and cultural factors, including role models, foster children's development of gender related normative beliefs. Role models provide children with information about the appropriate behaviors for males and females (Perry & Bussey, 1979). Throughout childhood, boys and girls are most influenced by same-gender models (Bussey & Perry, 1982). In fact, as early as 25 months, children begin imitating same-gender models (Kujawski & Bower, 1993). Naturally, parents are children's most influential role models. Parents' beliefs, attitudes, and behaviors influence children's gender-typing (Fagot & Leinbach, 1989). Children whose parents have stereotypical gender-role beliefs are more likely to be rigid in their own gender-typed beliefs (Repetti, 1984).

Additionally, children whose parents engage more frequently in gender-typed activities are more likely to participate in gender-typed activities (Serbin et al., 1993). In contrast, children whose parents participate in atypical gendered activities display more flexibility with gender-role beliefs and behaviors (Serbin et al., 1993; Weinraub, Clemens, Sockloff, Ethridge, Gracely, & Meyers, 1984). For instance, boys who are read to by their fathers are more likely to perceive reading as a masculine activity (May & Ollila, 1981).

Although parents are the primary role models for young children, other same-gender adults influence beliefs as well. Shapiro (1980) found that boys with male teachers had a more positive attitude toward reading than boys with female teachers. These findings are consistent with the view that same-gender role models are critical for communicating beliefs, attitudes, and behaviors (Perry & Bussey, 1979).

Educators and the educational environment may also influence students' gendered stereotypes. For example, the balanced presence of female and male educators may influence normative beliefs. Mancus (1992) observed that elementary students in schools with male teachers held significantly less stereotyped views about school and teachers than students in schools with no male teachers. While the results suggested that the greatest influence was on boys, all students benefited from the presence of male teachers. Mancus found that over-identification with female teachers was a "menace to healthy sexual-social development and to academic achievement later" (p. 126). She concluded:

Significant increases in number of non-stereotyping responses made by treatment school children over control students, regardless of sex, provides evidence that girls and boys are less rigid in their gender-role assignments when they have both male and female teachers. (p. 126)

Similarly, Paradise and Wall (1986) found that first grade students in schools with female principals held less stereotypical views about occupations. In each study, the researchers concluded that the balanced exposure of male and female role models moderated normative and stereotype beliefs.

Research investigating the relationship between teacher characteristics and student beliefs is not extensive. Limited studies found that same-gender role models can influence students' beliefs about academic subjects. Dee (2007) found that teacher gender could significantly influence student engagement with specific subjects. This is especially true for subjects in which particular groups of students face stereotype threats. For example, findings show that female role models can help improve girls' beliefs about science (Tyler-Wood, Ellison, Lim, & Periathiruvadi, 2012). Though limited empirical evidence can be found on the relationship between the teacher's gender and student

attitude, a number of studies have directly investigated the relationship between the gender of the teacher and student performance. Pederson, Shinedling, and Johnson (1968) investigated the effects of an examiner's gender and student performance on a math subtest of an intelligence test. They found that subjects performed best for same-gender examiners. This finding led researchers to examine the influence gender of the teacher has on student achievement in specific subject areas. Shinedling and Pederson (1970) found that on verbal tasks, fourth grade boys performed better for male teachers than for female teachers. They determined that "students' gender role identifications could operate to raise or lower the performance of a group of students" (p. 83). Similarly, Nixon and Robinson (1999) found that female faculty increases the achievement of high school girls. More recently, Dee (2007) analyzed the National Education Longitudinal Study of 1988 and found that across all grade levels, student achievement is significantly higher for same-gender teachers.

Conclusion

The study of attitude in an educational setting is complex. It is clear that student gender plays a primary role in reading development, including reading attitude and reading achievement. It is also apparent that the gender of the teacher can influence beliefs, attitude, and possibly, achievement. What has not been explained is the effect that gender has on the relationship between reading attitude and reading achievement. For example, there is no evidence of whether the gender of the student and teacher alone or specific teacher-student gender pairings affect the correlation between reading attitude and reading achievement. Further exploring gender's role could assist in explaining under which conditions reading attitude is most correlated with reading achievement. Eagly and

Chaiken (1993) concluded that because one's attitude and normative beliefs about something are shaped from similar experiences and related beliefs, researchers must be willing to study them under the same theoretical framework. Students view activities such as reading through their own normative lens and the gender of the teacher can alter the normative climate of the classroom, so it is reasonable to study the interaction of these variables. This line of research is also consistent with Liska, who argued that attitude influences behavior most in a supportive normative and social climate.

Investigating the relationship between attitude and achievement and the influences on each can add to the literature in a large, but lacking field of attitude research. This research investigated relationships between factors such as gender of the teacher, gender of the student, reading attitude, and reading achievement. Such research has practical applications because deeper understanding of the influence of attitude on achievement can ultimately help inform instructional practice to place students in beneficial conditions.

CHAPTER 3

METHODOLOGY

This study had two purposes that were addressed with a secondary data analysis of pre-existing data collected by the participating school district. The primary purpose of this study was to identify under which conditions reading attitude best predicted reading achievement. The secondary purpose of this study was to replicate findings that there are gender differences in reading attitude and reading achievement and that reading attitude predicts reading achievement. This chapter includes information about the following: participants, measures, procedures, and data analysis.

Participants

The participants in this study were 230 sixth grade students in a suburban, 6-8 grade middle school located in southeastern Pennsylvania. All participants were sixth grade students in the 2012-2013 or the 2013-2014 school years. Demographics of the sample represent the population of the school. The demographic information from the 2013-2014 school year showed that the school had an overall student population of 412 students. Approximately 89% of the students were white, 5% were African-American, and 3% were Hispanic. Approximately 22% of the students were eligible for discounted or free lunch. Participants of the study were from twelve Reading, English, and Language Arts (RELA) classes, taught by four female and two male teachers. Each of the six teachers had an elementary education certification and a middle level English certification.

It should be noted that not all 6th grade students from the 2012-2013 and 2013-2014 school years were included in this study. Over the two school years, 22 students did

not participate in the reading attitude survey or did not have scores recorded for them. According to the school administrator, 14 of the students who did not participate in the survey were in replacement Reading and Language Arts (RELA) classes for intensive support. These students followed a modified replacement curriculum, which differed from the on-level RELA classes. The additional eight students who did not participate were either absent from school, chose not to participate, or were completing other tasks. Because I did not record students' names to protect confidentiality, I was unable to determine the exact number who did not participate for each reason.

Table 1 includes the frequency and percentage results for the demographic items pertaining to student subgroups as well as comparable school population percentages. Although the frequencies and percentages of the sample ($n = 230$) show a slightly unbalanced representation of male and female students, it was representative of the school's population (53.9% males and 46.1% females during the 2013-2014 school year). Female teachers taught 63.9% of the sample RELA students, which was lower than the 78.3% of the school population who had female RELA teachers. The percentage for the population was inflated because females taught all 8th grade RELA students due to a different class structure than the 6th and 7th grades. Gender-matched teachers taught 46.1% of the sample RELA students compared to 49.2% of the school population.

Table 1.

Student Sample Subgroups – Frequency Table

Group	Sample Subgroup	Sample Frequency	Sample Percent	Population Percent
Student's Gender	Male	125	54.3	53.9
	Female	105	45.7	46.1
RELA Teacher's Gender	Male	83	36.1	21.7
	Female	147	63.9	78.3
Teacher/Student Gender Match	Matched	106	46.1	49.2
	Unmatched	124	53.9	50.8

Measures

Reading Attitude. The instrument used to collect reading attitude data was the Elementary Reading Attitude Survey (ERAS). The ERAS was developed by McKenna and Kear (1990). The ERAS contained 20 items scored on a 4-point scale. Appendix B contains the full survey that was administered. The survey yielded an overall reading attitude score, an academic reading attitude subscale score, and a recreational reading attitude subscale score. McKenna and Kear assessed the survey for internal consistency reliability for the full scale and two subscales. For grade 6 students, the full scale reliability coefficient measured $r = .89$, the academic subscale measured $r = .81$, and the recreational subscale reliability coefficient measured $r = .87$. The authors gathered evidence of construct validity by comparing participants' reading habits, reading ability, and television watching habits.

To test the recreational subscale's validity, McKenna and Kear (1990) compared scores of students with library cards to students without cards. Library cardholders had

significantly more positive attitudes toward recreational reading. For a second test of validity of the recreational subscale, the authors compared scores for students who had books checked out of the school library to those who did not. Students who had books checked out had significantly more positive attitudes toward recreational reading. The authors also compared recreational attitude scores for students who watched over two hours of television per day to students who watched under an hour of television. Students who watched under an hour of television had significantly more positive attitudes toward recreational reading. The authors tested the validity of the academic subscale by comparing academic reading attitudes of student with low, average, and high reading ability. The authors found that high ability readers had significantly more positive attitudes toward academic reading than students with low reading ability.

McKenna, Conradi, Lawrence, Jang, and Meyer (2012) created a reading attitude survey for middle school students. Similar the ERAS, the middle level reading attitude survey yields academic and recreational reading attitude subscores. The middle grade survey also explores attitudes toward digital reading and print reading. It yields the following scores: academic print, academic digital, recreational print, and recreational digital. This updated middle level survey was available at the time when the surveys for this study were administered; however, it was not considered by the school. I was unable to determine the exact reason for this, but the ERAS had been administered for norming purposes throughout the district in years prior to the study and were readily available for use.

Reading Achievement. Reading achievement was measured with the Northwest Evaluation Association's (NWEA) Measures of Academic Progress (MAP) reading

assessments (Northwest Evaluation Association, 2011). The MAP reading assessment is a nationally normed, criterion referenced, computerized adaptive test consisting of 42-item multiple-choice items. It yields an overall scaled score and four subscale scores. The four subscales are comprehension strategies, analyzing and interpreting literature, critical reading in content areas, and text structure and vocabulary. The MAP reading assessment has demonstrated high internal consistency for grade 6 ($r = .93$). NWEA established construct validity by comparing the MAP reading assessment to state and national standards. Additionally, scores from the test were found to have high correlations with various standardized achievement tests. For example, NWEA reported concurrent validity between the Grade 6 Reading MAP test and the SAT9 Reading Test to be .86. They also reported concurrent validity between the grade 6 reading MAP test and state reading tests to be between .72 and .87 (NWEA, 2004).

Procedures

The data used were pre-existing reading achievement tests and reading attitude surveys that were collected by the school during the 2012-13 and 2013-14 school years. The school district gave permission for use of the school data, provided that all data were de-identified and that the students, teachers, the school, or the district were not identified (See superintendent's letter in Appendix A).

All sixth grade students were required by the school district to complete a reading assessment. Students completed the assessment during their RELA class in early May 2013 or May 2014. The classroom teachers received the scores for their students within 24 hours. A student's test scores were available only to the classroom teacher, the

guidance counselor, and the principal. I met with the principal to collect students' scores. I recorded each student's overall reading score.

Each sixth grade student also completed an Elementary Reading Attitude Survey (ERAS) within a week before completing the reading assessment. Sixth grade teachers collected and scored their students' surveys. The survey is part of an ongoing school initiative to collect non-assessment data about students. The guidance counselor collected and recorded all scores to distribute to seventh grade teachers. I met with the guidance counselor to collect students' scores. I recorded each student's overall reading attitude, recreational reading attitude, and academic reading attitude.

The administration of reading attitude surveys may seem to be an unusual process, but in this school, it was not. The principal began an initiative for teachers to learn about their students. Each grade administered a different type of survey or questionnaire in order to get a better representation of the students than using achievement alone. The principal believed such surveys to be a quick and inexpensive way to gather information about students. In each grade, teachers reviewed the collected data during team planning time. In the case of the sixth grade reading surveys, the data collected were reviewed by the sixth grade teachers, but used more by the seventh grade teachers, mostly for small reading group purposes.

In addition to scores on the reading attitude and reading achievement measures, the de-identified database included demographic information about the students and the teacher, including the gender of the student, gender of the teacher, and for whether the student had a same-gender teacher. Gender of the student was coded 0 for female and 1 for male. Students with female teachers were coded 0 and students with male teachers

were coded 1. Students with opposite gender teachers were coded 0 and students with same-gender teachers were coded 1.

It should be noted that since this study used McKenna's model of reading attitude acquisition, it is important to view this study through the context of his model. Of the three factors McKenna believed influenced the development of reading attitude, the direct episodes of reading are the most practical to control for research purposes. Although this research is a secondary analysis, the direct episodes were reasonably controlled within the classroom setting. Within each school year, all sixth grade students had RELA at the same time of the day. Each RELA teacher used the same curriculum, which included the same textbook, group reading books, grammar lessons, vocabulary, and common reading assessments. Although the curriculum is not scripted, the teachers used the same prescribed sequence and activities according to the district curriculum map. In fact, the team of six teachers met once per week to plan instruction and discuss curricular issues such as pacing. Pacing for all classes was nearly identical, with all common assessments given to all classes on the same day.

Data Analysis

Once the data were recorded, I performed statistical analyses to address each of the research questions. For each research question, Table 2 contains a list of the relevant variables, the tests performed, and the type of results that were taken as evidence in support of the hypothesis. Independent samples *t*-tests were used to determine if a gender difference existed in academic reading attitude (ARA) and recreational reading attitude (RRA). An independent samples *t*-test was also used to determine if gender difference existed in reading achievement. I conducted an additional independent samples *t*-test to

determine if students' RRA or ARA differ for male and female teachers. I then conducted a regression analysis to determine the predictive capacity of ARA and RRA on reading achievement. In order to establish under which conditions reading attitude most influences reading achievement, I conducted additional regression analyses. For example, to determine if ARA or RRA predict reading achievement differently for girls and boys, I regressed reading achievement on student gender, the interaction of student gender and RRA, and the interaction of student gender and ARA. If either interaction term was significant, I conducted follow-up regression analyses, separate for boys and girls, to interpret the interaction. To establish if RRA and ARA predict reading achievement differently for students with male and female teachers, I regressed reading achievement on teacher gender, the interaction of teacher gender and ARA, and the interaction of teacher gender and RRA. If either interaction term was significant, I conducted follow-up regression analyses, separate for female and male teachers, to interpret the interaction. To determine if ARA and RRA predict reading achievement differently for students with same-gender teachers I regressed reading achievement on teacher-student gender matching, and the interaction of gender matching and ARA, and the interaction of gender matching and RRA. If either interaction term was significant, I conducted follow-up regression analyses, separate for same-gender and opposite-gender teachers, to interpret the interaction.

Table 2. *Summary of Research Questions*

Research Questions	Variable(s)	Analysis	Results to Support Hypothesis
1. What gender differences exist in reading attitude for middle school students?	ARA RRA Reading achievement	Independent samples <i>t</i> -test	t-value significant at $p < .05$ comparing boys' and girls' academic reading attitude and recreational reading attitude scores indicate a difference based on student gender
2. What gender differences exist in reading achievement for middle school students?	Reading achievement	Independent samples <i>t</i> -test	t-value significant at $p < .05$ comparing boys' and girls' reading achievement scores indicate a difference based on student gender
3. Do students' reading attitudes differ when they have male versus female reading teachers?	ARA RRA Teacher gender	Independent samples <i>t</i> -test	t-value significant at $p < .05$ comparing students' academic reading attitude and recreational reading attitude scores for male and female teachers indicate a difference based on teacher gender
4. Does reading attitude predict reading achievement for middle school students?	ARA RRA Reading achievement	Regression analysis of RA on RRA and ARA, in the same analysis	Beta weights with values significant at $p < .05$ indicate that the factor is a predictor of reading achievement
5. Does reading attitude predict reading achievement differently for girls and boys?	ARA RRA Reading achievement Student gender	Regression analysis of RA on student gender, student gender x RRA and student gender x ARA	Beta weights with values significant at $p < .05$ would have resulted in follow-up regression analyses, separate for boys and girls, to interpret the interaction
6. Does reading attitude predict reading achievement differently for students with male and female teachers?	ARA RRA Reading achievement Teacher gender	Regression analysis of RA on teacher gender, teacher gender x RRA and teacher gender x ARA	Beta weights with values significant at $p < .05$ would have resulted in follow-up regression analyses, separate for male and female teachers, to interpret the interaction
7. Does reading attitude predict reading achievement differently for students with same-gender teachers?	ARA RRA Reading achievement Gender matching	Regression analysis of RA on student-teacher gender matching, gender matching x RRA and gender matching x ARA	Beta weights with values significant at $p < .05$ resulted in follow-up regression analyses, separate for same-sex vs. opposite-sex teachers, to interpret the interaction

Note. RA = reading achievement; ARA = academic reading attitude; RRA = recreational reading attitude.

CHAPTER 4

RESULTS

The purpose of this study was to clarify the conditions under which reading attitude is related to reading achievement. This chapter includes analysis of data from reading attitude surveys, reading achievement assessments, gender of the student, and gender of the teacher. I investigated the following research questions. The questions were divided into two types: gender differences and predicting reading achievement.

Research Questions

Gender Differences

1. What gender differences exist in reading attitudes for middle school students?
2. What gender differences exist in reading achievement for middle school students?
3. Do students' reading attitudes differ when they have male versus female reading teachers?

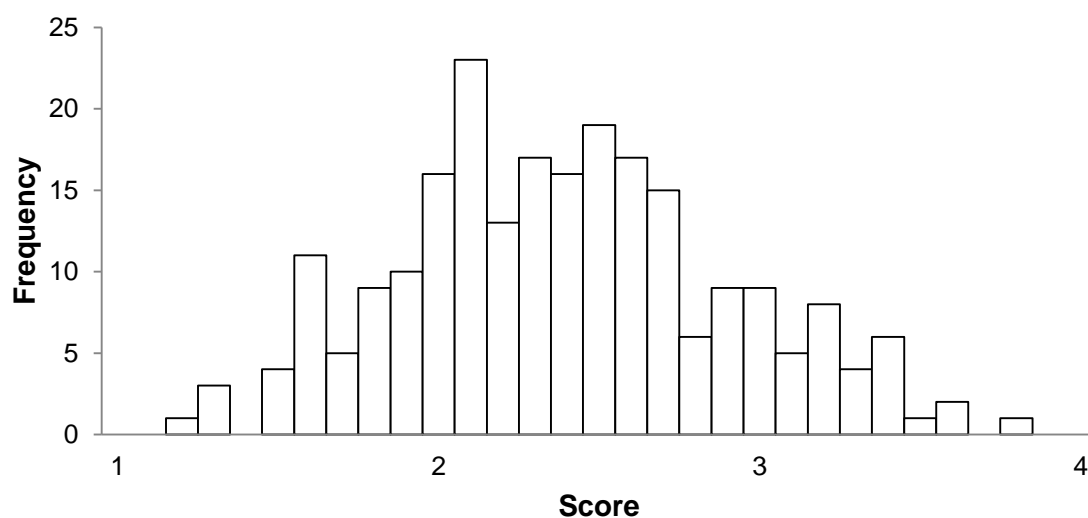
Predicting Reading Achievement

4. Does reading attitude predict reading achievement for middle school students?
5. Does reading attitude predict reading achievement differently for girls and boys?
6. Does reading attitude predict reading achievement differently for students with male and female teachers?
7. Does reading attitude predict reading achievement differently for students with same-gender teachers?

Survey Data

The mean survey score for academic reading attitude was 23.9, which ranked at the 49th percentile according to McKenna and Kear’s normative data. The average score for each of the ten academic reading items was 2.39. Qualitatively, a 2.39 is between “a little happy” and “a little upset”. Figure 1 shows the distribution of the students’ mean scores per academic reading attitude item. Scores were normally distributed, with a skewness of 0.22 and kurtosis of -0.33.

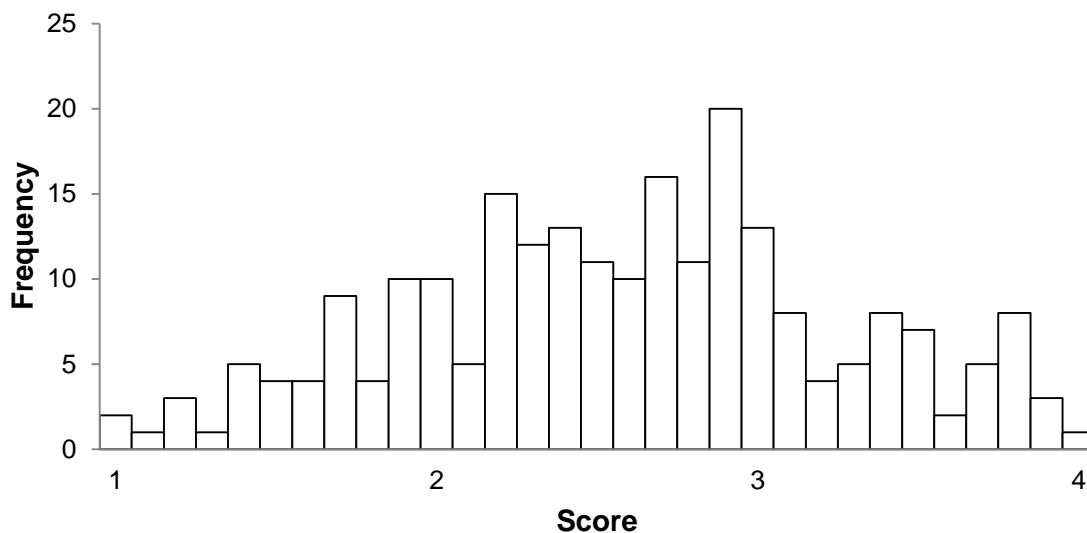
Figure 1. Distribution of Mean Scores per Academic Reading Attitude Item



The mean survey score for recreational reading attitude was 25.8, which ranked at the 58th percentile according to McKenna and Kear’s normative data. The average score for each of the ten recreational reading items was 2.58. Qualitatively, a 2.58 is between “a little happy” and “a little upset”. Figure 2 shows the distribution of the students’ mean

scores per recreational reading attitude item. Scores were normally distributed, with a skewness of -0.05 and kurtosis of -0.5.

Figure 2. Distribution of Mean Scores per Recreational Reading Attitude Item



Research Question 1: What gender differences exist in reading attitudes for middle school students?

Differences between the reading attitudes of girls and boys were tested with independent-samples *t*-tests. As displayed in Table 3, the *t*-tests revealed gender differences in the academic and recreational reading attitudes of middle school students. Although girls had more positive scores for academic and recreational reading attitudes, the results of the first *t*-test indicated that the academic reading attitudes of girls were not significantly more positive than the academic reading attitudes of boys. Results of the second *t*-test indicated that girls had significantly more positive recreational reading attitudes than boys, with a medium effect size (Cohen's $d = 0.46$). Qualitatively, girls'

mean score per item (2.74) was closer to “a little happy” and boys’ mean score per item (2.44) was slightly closer to “a little upset.”

Table 3.

Differences of Academic and Recreational Reading Attitudes of Girls and Boys

Reading Attitude	Girls (<i>n</i> = 105)		Boys (<i>n</i> = 125)		<i>t</i> (228)	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Academic	24.20	5.48	23.68	4.83	0.764	.445	0.101
Recreational	27.44	6.67	24.42	6.39	3.497	.001	0.463

Question 2: What gender differences exist in reading achievement for middle school students?

Gender differences in reading achievement were tested with an independent-samples *t*-test. Girls ($M = 222.29$, $SD = 9.18$) scored higher than boys ($M = 220.22$, $SD = 11.46$); however, the *t*-test results indicated that the differences were not statistically significant ($t[227.52] = 1.519$, $p = .130$, 95% CI[-0.615, 4.745]).

Question 3: Do students' reading attitudes differ when they have male versus female reading teachers?

The differences of the academic and recreational reading attitudes of students with male and female teachers were tested with independent-samples *t*-tests. As shown in Table 4, the results revealed that students with male teachers had more positive academic

and recreational reading attitudes; however, only the academic reading attitude of students with male teachers were significantly more positive than students with female teachers. The recreational reading attitude of students with male teachers was not significantly different from students with female teachers.

Table 4.

Differences of Academic and Recreational Reading Attitudes of Students with Male and Female Teachers

Reading Attitude	Students with Male Teachers (<i>n</i> = 83)		Students with Female Teachers (<i>n</i> = 147)		<i>t</i> (228)	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Academic	24.87	4.97	23.38	5.16	-2.125	.035	0.294
Recreational	26.16	7.27	25.59	6.34	-0.614	.540	0.083

Question 4: Does reading attitude predict reading achievement for middle school students?

A regression analysis was used to determine if academic and recreational reading attitude predicted reading achievement. Table 5 presents the correlation matrix and descriptive statistics for the regression of reading achievement on academic and recreational reading attitudes. Note that only recreational reading attitude correlated with reading achievement; therefore, academic reading attitude was excluded from subsequent regression analyses.

Table 5.

Correlation Matrix and Descriptive Statistics for Academic and Recreational Reading Attitudes and Reading Achievement

	<i>M</i>	<i>SD</i>	1	2	3
1. Reading Achievement	221.16	10.51	–		
2. Academic Reading Attitude	23.93	5.13	-.014	–	
3. Recreational Reading Attitude	25.80	6.86	.231*	.544*	–

* $p < .01$.

A regression analysis was conducted to determine if recreational reading attitude predicted reading achievement. Table 6 presents the results of the regression analysis of reading achievement on recreational reading attitudes. The regression resulted in a beta weight with a positive valence, significant at $p < .05$. The beta coefficient indicated that students with a more positive recreational reading attitude tended to score higher in reading achievement. Approximately 5.3% of the variability in reading achievement can be explained by recreational reading attitudes.

Table 6.

Regression Analysis of Reading Achievement on Recreational Reading Attitude

Predictor Variable	<i>B</i>	<i>SE_b</i>	β	<i>t</i>	<i>p</i>	95% CI for <i>B</i>	
						LL	UL
RRA	.363	.101	.231	3.580	.0005	.163	.563

Note. $R^2 = .053$, $F(1, 228) = 12.819$, $p < .001$. RRA = recreational reading attitude.

Question 5: Does reading attitude predict reading achievement differently for girls and boys?

A regression analysis was conducted to determine if recreational reading attitude predicted reading achievement differently for girls and boys. Table 7 shows the results of the regression analysis of reading achievement on recreational reading attitude, student gender, and the interaction of student gender with recreational reading attitude. Because the interaction of student gender and recreational reading attitude resulted in a beta weight that was not significant at $p < .05$, the interaction was not examined using separate follow-up analyses for girls and boys.

Table 7.

Regression Analysis of Reading Achievement on Student Gender and the Interaction of Student Gender with Recreational Reading Attitude

Predictor Variables	<i>B</i>	SE _b	β	<i>t</i>	<i>p</i>	95% CI for <i>B</i>	
						LL	UL
Student Gender	1.615	5.606	.077	.288	.774	-9.432	12.662
RRA	.500	.335	.318	1.495	.136	-.159	1.160
Student Gender x RRA	-.102	.209	-.144	-.486	.627	-.513	.310

Note. $R^2 = .056$, $F(3, 226) = 4.508$, $p = .004$. RRA = recreational reading attitude.

Question 6: Does reading attitude predict reading achievement differently for students with male and female teachers?

A regression analysis was conducted to determine if recreational reading attitude predicted reading achievement differently for students with female and male teachers. Table 8 shows the results of the regression analysis of reading achievement of teacher

gender, recreational reading attitude, and the interaction of teacher gender with recreational reading attitude. Because the interaction of teacher gender and recreational reading attitude resulted in a beta weight that was not significant at $p < .05$, the interaction was not examined using separate follow-up analyses for female and male teachers.

Table 8.

Regression Analysis of Reading Achievement on Teacher Gender and the Interaction of Teacher Gender with Recreational Reading Attitude

Predictor Variables	<i>B</i>	SE _b	β	<i>t</i>	<i>p</i>	95% CI for <i>B</i>	
						LL	UL
Teacher Gender	-15.283	5.245	-.699	-2.914	.004	-25.618	-4.948
RRA	-.114	.295	-.072	-.386	.700	-.695	.467
Teacher Gender x RRA	.348	.196	.540	1.777	.077	-.038	.733

Note. $R^2 = .147$, $F(3, 226) = 13.028$, $p < .001$. RRA = recreational reading attitude.

Question 7: Does reading attitude predict reading achievement differently for students with same-gender teachers?

A regression analysis was conducted to determine if recreational reading attitude predicted reading achievement differently for students matched with same-gender teachers. Table 9 shows the results of the regression analysis of reading achievement on student-teacher matching and on the interaction of student-teacher matching with recreational reading attitude. Because the interaction of student-teacher matching and recreational reading attitude resulted in a beta weight significant at $p < .05$, the interaction was examined using separate follow-up analyses for matched and unmatched students.

Table 9.

Regression Analysis of Reading Achievement on Student-Teacher Gender Matching and the Interaction of Gender Matching with Recreational Reading Attitude

Predictor Variables	<i>B</i>	SE _b	β	<i>t</i>	<i>p</i>	95% CI for <i>B</i>	
						LL	UL
Gender Match	-20.093	5.262	-.954	-3.818	.000	-30.462	-9.724
RRA	-.743	.314	-.473	-2.370	.019	-1.361	-.125
Gender Match x RRA	.735	.197	1.176	3.721	.000	.346	1.124

Note. $R^2 = .111$, $F(3, 226) = 9.372$, $p < .001$. RRA = recreational reading attitude.

The follow-up regression analyses for students with matched and unmatched teachers revealed differences in how recreational reading attitude predicts reading achievement for each group. Table 10 shows the results for the follow-up regression analysis for students with unmatched teachers. Recreational reading attitude did not significantly predict reading achievement for students with unmatched teachers.

Table 10.

Regression Analysis of Reading Achievement on Recreational Reading Attitude for Unmatched Students

Independent Variable	<i>B</i>	SE _b	β	<i>t</i>	<i>p</i>	95% CI for <i>B</i>	
						LL	UL
RRA	-.009	.145	-.005	-.060	.952	-.296	.279

Note. $R^2 = .000$, $F(1,122)$, $p = .952$. RRA = recreational reading attitude.

Table 11 shows the results for the follow-up regression analysis for students with matched teachers. Recreational reading attitude significantly predicted reading

achievement for students with matched teachers. For matched students, approximately 22.2% of the variability in reading achievement could be explained by recreational reading attitude. For matched students, a more positive recreational reading attitude was linked to higher reading achievement scores.

Table 11.

Regression Analysis of Reading Achievement on Recreational Reading Attitudes for Matched Students

Predictor Variable	<i>B</i>	SE _b	β	<i>t</i>	<i>p</i>	95% CI for <i>B</i>	
						LL	UL
RRA	.726	.133	.472	5.453	.0005	.462	.990

Note. $R^2 = .222$, $F(1, 104)$, $p < .001$. RRA = recreational reading attitudes.

Further analyses showed that recreational reading attitude did not significantly predict for either girls or boys with unmatched teachers; however, they did significantly predict for girls and boys with matched teachers. Table 12 shows the results of separate follow-up analyses for girls with matched and unmatched teachers. For unmatched girls, approximately 4.1% of the variability in reading achievement could be explained by recreational reading attitude; however, this effect was not significant. In contrast, for matched girls, approximately 16.3% of the variability in reading achievement could be explained by recreational reading attitude. Consistent with the pattern established earlier, more positive recreational reading attitudes were linked to higher scores on reading achievement.

Table 12.

Regression Analyses of Reading Achievement on Recreational Reading Attitude for Matched and Unmatched Girls

Group	Predictor Variable	<i>B</i>	<i>SE_b</i>	β	<i>t</i>	<i>p</i>	95% CI for <i>B</i>	
							LL	UL
Unmatched ^a	RRA	.279	.217	.202	1.287	.206	-.160	.717
Matched ^b	RRA	.527	.152	.404	3.473	.001	.224	.830

Note. a. $R^2 = .041$, $F(1,39)$, $p = .206$. b. $R^2 = .163$, $F(1,62)$, $p = .001$. RRA = recreational reading attitude.

Table 13 shows the results of separate follow-up analyses for boys with matched and unmatched teachers. For unmatched boys, approximately 0.2% of the variability in reading achievement could be explained by recreational reading attitude; however, this effect was not significant. In contrast, for matched boys, approximately 23% of the variability in reading achievement could be explained by recreational reading attitude. This effect was positive and significant. Thus, for matched boys, more positive recreational reading attitudes were linked with high reading achievement scores.

Table 13.

Regression Analyses of Reading Achievement on Recreational Reading Attitude for Matched and Unmatched Boys

Group	Predictor Variable	<i>B</i>	<i>SE_b</i>	β	<i>t</i>	<i>p</i>	95% CI for <i>B</i>	
							LL	UL
Unmatched ^a	RRA	-.078	.199	-.043	-.390	.698	-.473	.318
Matched ^b	RRA	.759	.220	.479	3.455	.001	.315	1.203

Note. a. $R^2 = .002$, $F(1,81)$, $p = .698$. b. $R^2 = .230$, $F(1,40)$, $p = .001$. RRA = recreational reading attitude.

Because academic reading attitude was not predictive of reading achievement, it was not included in the regressions. Consequently, the single predictor regressions were essentially Pearson correlations. Table 14 shows the correlation between each type of reading attitude and reading achievement for each student group. Although the table simply confirms the findings from research questions, it may be informative in a way that the regression results are not.

Table 14.

Correlations for Reading Attitude and Reading Achievement by Student Group

Group	<i>n</i>	Academic Reading Attitude	Recreational Reading Attitude
All Students	230	-.014	.231*
All Male Students	125	-.136	.166
All Female Students	105	.134	.290*
All Students with Male Teachers	83	.097	.395*
All Students with Female Teachers	147	-.016	.151
All Students – Matched	106	.069	.472*
All Students – Unmatched	124	-.108	-.005
Girls – Matched	64	.190	.404*
Girls – Unmatched	41	.179	.202
Boys – Matched	42	.017	.479*
Boys – Unmatched	83	-.190	-.043

* $p < .01$.

CHAPTER 5

DISCUSSION

The purpose of this study was to identify the conditions under which reading attitude was most related to reading achievement. The motivation for this study was two-fold. First, I had a desire to clarify the relationship between reading attitude and reading achievement - my belief was that the moderate link between reading attitude and reading achievement found in prior studies was an average of conditions that had stronger and weaker links. Second, I wanted to gain understanding about the dynamics between student and teacher genders. My goal was to identify which student-teacher gender pairing created a setting for the strongest link between reading attitude and reading achievement.

As suggested in the literature review, the relationship between reading attitude and reading achievement is complex. The findings in this study revealed that the genders of the students and teachers add to the complexity of the relationship. Reviewed together, the results of this study indicated that reading attitude could significantly predict reading achievement. The findings also highlighted that knowing the student-teacher gender pairing is vital for understanding the relationship between reading attitude and reading achievement. This chapter contains five sections: summary of results, conclusions, implications for schools (policy and practice), recommendations for future research, and limitations.

Summary of Results

Research questions 1-3 investigated differences in reading attitude and reading achievement while using student gender or teacher gender as grouping variables. These questions are important to analyze individually because they each provide background about the variables that were being studied. Research question 4 replicated findings that reading attitude predicts reading achievement. The remaining questions were used to clarify under which conditions reading attitude is most related to reading achievement. Together, the results for research questions 5-7 added to the existing literature by building upon the findings from question 4 to help explain which conditions produce the strongest relationship between reading attitude and reading achievement.

Gender Differences

Research Question 1: What gender differences exist in reading attitudes for middle school students?

The finding for this question replicated previous findings that girls have more positive recreational reading attitudes than boys. This finding is consistent with McKenna's (1994) hypothesis that the influences of gender-related normative beliefs make girls more likely to think positively about reading than boys. This finding is also consistent with other previous research that found that girls tend to have more positive attitudes toward reading for enjoyment (e.g. Cloer & Pearman, 1993; Coles & Hall, 2002; Parker & Paradis, 1986; Stevenson & Newman, 1986).

The additional finding that there were not gender differences in students' academic reading attitude is also consistent with prior findings (Cloer & Pearman, 1993).

Recreational and academic reading attitudes are related; however, because the purpose for each type of reading is different, readers may contextualize them differently (McKenna, 1994). Such contextualization may lead students to hold different normative beliefs about reading for enjoyment and reading for academic purposes. For example, boys' normative perception that reading for enjoyment is a feminine activity may contribute toward their recreational attitude, but not their academic reading attitude. Because reading for academic purposes may not be perceived with as strong a gendered stereotype, boys have similar academic reading attitudes to girls. In a meta-analysis of the relationship between reading attitude and reading achievement, Petscher (2010) found that there were no gender differences in students' academic reading attitudes. The similarity of how girls and boys felt about academic reading may highlight the similarity of how girls and boys feel about schoolwork rather than their attitude toward reading itself. This finding provided preliminary evidence that academic reading attitude was not as gender-stereotyped as recreational reading attitude; the present study's findings provide further evidence for this assertion.

Research Question 2: What gender differences exist in reading achievement for middle school students?

While this finding did not replicate previous studies that indicated that girls have significantly higher reading achievement than boys, the findings may be attributable to the school environment. The most recent data released by the Pennsylvania Department of Education show that for each of the previous ten years, the school used for this study

was in the top ten percent of schools in Pennsylvania for reading achievement (Pennsylvania Department of Education, 2014). According to Legewie and DiPrete (2012), higher achieving schools tend to have smaller achievement gaps, especially with regard to gender. The authors concluded that typically underperforming groups benefit from high performing school environments because having a high achieving peer reference group helps to drive performance. In this case, incoming sixth grade boys may have especially benefited from entering a high performing school. The finding that boys were not significantly behind girls in reading was an exciting finding for this school. This finding may also highlight the effectiveness of the teachers and the school. The mean reading achievement score would rank the participants of the study in approximately the 66th percentile nationally. Overall, the scores from the two cohorts of sixth graders in this school show that girls and boys achieve highly in reading.

Research Question 3: Do students' reading attitudes differ when they have male versus female reading teachers?

The findings showed that recreational attitude was not significantly different for students with male versus female teachers. An additional finding revealed that academic reading attitude was more positive for students with male teachers. Although this was an interesting finding, subsequent findings revealed that academic reading attitude did not relate to reading achievement. Consequently, academic reading attitude was not an applicable variable for the majority of this study and was not included in questions 5-7. Nevertheless, the finding that academic reading attitude was more positive for students

with male teachers is consistent with the hypothesis that the gender of the teacher can have an influence on students' attitudes toward the subjects they are teaching. Further research could explore the reasons why teachers' gender was linked to academic reading attitude, but not linked to recreational reading attitude. The findings for question 1 showed that girls and boys had similar levels of attitude toward academic reading attitude, so for there to be differences for students with male and female teachers could be more reflective of the students' attitude toward the teachers or the class than academic reading. It is possible that the students with male teachers enjoyed class more than students with female teachers and associated that enjoyment with academic activities, including reading.

Predicting Reading Achievement

Research Question 4: Does reading attitude predict reading achievement for middle school students?

The findings for this research question replicated previous findings that recreational reading attitude is a significant predictor of reading achievement (McKenna et al., 1995). Researchers have reasoned that positive reading attitude leads to higher reading achievement because readers who view reading more positively are more likely to read more frequently (Elley, 1994; Sainbury & Schagen, 2004). This benefit to reading achievement is especially true for those who read more often for pleasure (Chiu & McBride-Chang, 2006; Mullis, Martin, Kennedy, & Foy, 2007). In contrast, the finding that academic reading attitude was not correlated with reading achievement led to its exclusion from the subsequent research questions. In combination with question 1, the

evidence suggested that recreational reading attitude was a more useful variable for explaining reading achievement.

The findings for this question were expected; however, because this question addressed the entire sample without regard to student gender or teacher gender, the findings did not help to clarify under which conditions the hypothetical causal link between reading attitudes and reading achievement is strongest. The remaining questions built upon the findings from this question to identify the conditions with the strongest relationship between reading attitudes and reading achievement.

Research Question 5: Does reading attitude predict reading achievement differently for girls and boys?

Research Question 6: Does reading attitude predict reading achievement differently for students with male and female teachers?

Research Question 7: Does reading attitude predict reading achievement differently for students with same-gender teachers?

Research questions 5-7 should be examined together. The primary goal of this study was to determine under which conditions reading attitude was most related to reading achievement. Accordingly, research questions 5-7 were planned to increase specificity of student-teacher conditions, with the final question investigating the most specific conditions. Together, the findings from these questions revealed that evaluating either student gender or teacher gender in isolation did not clarify the conditions with the strongest attitude-achievement link. The link between reading attitude and reading

achievement was similar for girls and boys, and for students taught by female and male teachers. However, when evaluated for their interaction, student and teacher gender together did help to clarify such conditions. The relationship between reading attitude and reading achievement was only significant for students who were taught by gender-matched teachers. In fact, being taught by an opposite gender teacher resulted in nearly no statistical relationship between reading attitude and reading achievement. The strongest link between reading attitude and reading achievement was for boys taught by male teachers.

Researchers have explained that reading attitude predicts reading achievement because reading attitude also predicts reading behavior (Baker & Wigfield, 1999; Chiu & McBride-Chang, 2006; Sainbury & Schagen, 2004; Wigfield & Guthrie, 1997). Thus, the hypothetical chain of events is as follows: students who enjoy reading more will spend more time reading and students who read more will perform better in school. Wilhem and Smith (2104) studied how reading for pleasure translates to higher academic achievement. Using the framework of Dewey's four educative interests, they identified the following pleasures from reading: play, work, intellectual, and social. The authors found that each type of reading pleasure engages and connects the reader to the text in varying ways, including the practice of important academic skills such as predicting, inferring, and the recognition of themes. Additionally, Wilhem and Smith found that reading for academic purposes often interferes with the pleasure of reading, resulting in reduced connection and engagement with the text.

If reading attitude predicts reading achievement because of reading related behaviors, then from the differences found in this study, there appear to be other factors involved. Students with gender-matched and unmatched teachers behaved differently. Because reading attitude only predicted reading achievement for students with gender-matched teachers, it appears that those students behaved more consistently with their attitude than students with unmatched teachers. Attitude itself did not account for these differences. Researchers have argued that normative beliefs must also be taken into account before analyzing consistency between attitude and behavior (Acock & DeFleur, 1972; Fishbein & Ajzen, 1975; Liska, 1984; Terry & Hogg, 1996; Terry, Hogg & White, 1999). With regard to reading, McKenna (2001) theorized that normative beliefs help guide the development of reading attitude, which, in turn, guides behavior. But, researchers have not fully examined the resultant relationship between reading attitude and reading achievement through a normative lens. Filling this gap in the literature could help to clarify the path from reading attitude to reading achievement. Explaining why students behaved differently may be difficult, but prior research could help to clarify the differences in attitude-behavior consistency and shed light on why attitude is a better predictor of achievement for gender-matched students.

In a review of attitude-behavior consistency related studies, Terry, Hogg, and White (1999) determined that the normative context was a key factor for the alignment of attitudes and behavior. They argued that when some aspect of an individual's self-identity is salient, such as one's gender, the individual constructs "a context-specific group norm from available, and usually shared, social comparative information" (p. 72).

The resulting perceived norm could have substantial effects and cause “people to think, feel, behave, and define themselves in terms of group norms rather than unique properties of the self” (p. 72). They continued:

People are influenced by norms not for social approval, nor because others have told one to, nor because others are watching but because norms prescribe the context-specific attitudes and behaviors appropriate for group members. Norms can be enacted in private; a particular group membership just needs to be the contextual basis for self-definition. Thus, norms are inextricable properties of groups that influence people through self-categorization. (p. 72)

Accordingly, the normative climate can have a pivotal role in whether an individual’s attitude translates to consistent behavior. In fact, Terry, Hogg, and White added, “Participants were more likely to behave in accordance with their attitude when exposed to an attitudinally congruent ingroup norm than when exposed to an incongruent norm” and that “exposure to an attitudinally congruent group norm should strengthen attitude-behavior consistency because it validates the attitudinally congruent behavior as appropriate for group members” (p. 91).

In this study, gender-matched students, regardless of their reading attitude, may have perceived that the normative climate was supportive of attitudinally congruent behavior. As a result, students with gender-matched teachers may have behaved more in accordance with their reading attitudes than students with opposite gender teachers. Such findings support Liska’s (1984) view that both attitudes and normative beliefs are essential for predicting behavior. Similar to McKenna, he believed that normative beliefs primarily influence behavior by reinforcing attitude; yet, Liska also theorized that attitude would only be exhibited behaviorally if the normative climate supported it. In this case,

the hypothesis that reading attitude influences reading achievement appears to be contingent on gender matching between students and teachers.

Liska was not the first researcher to suggest such contingencies for attitude and normative beliefs to predict behavior. Acock and DeFleur (1972) studied the idea that “neither attitude, nor social situational variables adequately predict behavior when treated separately” (p. 714). They argued that while attitude could be the “base-line factor for decision-making about action toward the relevant issue,” the decision to act might require a particular normative climate (p. 725). Although their research was not based on academic behaviors, the same effect could apply to students and reading. If students feel that the normative climate is supportive, then their attitudes may be more likely to lead to corresponding reading behaviors. The findings from this study suggest that students with gender-matched teachers perceived normative support for their reading attitude, which translated into attitude-consistent reading behaviors. Thus, it is reasonable to believe that the teacher and the teacher’s gender helped to set the tone of the normative climate.

Another key difference between this study and Acock and DeFleur’s work is that peers were the primary agents determining the normative climate in their studies. In this study, teachers appear to be a key determiner of the normative climate. Terry, Hogg, and White (1999) found that identification with a group could be contextual and change across situations. For example, while peers may provide the primary normative climate out of school, teachers may set the normative climate in school. In this case, it appears that the students identified with their own gender and that the gender of their teacher may have changed the students’ perception of the normative climate.

It is important to note that the apparent effects of student-teacher gender matching did not necessarily influence the mean level of students' reading attitude or students' reading achievement, only the hypothesized impact of reading attitude on behavior, and indirectly, the impact of reading attitude on achievement. The primary effect was on how reading attitude related to reading achievement. From these findings, it would not be expected that students with gender-matched teachers would have more positive reading attitudes or higher reading achievement. The finding was merely that reading attitude is more predictive of reading achievement for gender-matched students. Consistent with this finding would be that students' reading attitude and reading achievement would be more aligned for students with gender-matched teachers. That result could be desirable for students with a positive reading attitude; however, it would *not* be desired for students with a negative reading attitude.

Conclusions

From the results of this study, I have drawn the following conclusions:

1. Recreational reading attitude is more predictive of achievement and, therefore, has more utility than academic reading attitude for predicting achievement.
2. Recreational reading attitude provides greater predictive value when studied in the context of classroom norms. Although recreational reading attitude predicted reading achievement, its predictive value was increased when accounting for student and teacher gender. Taken together, it appears that recreational reading attitude is most predictive when students are paired with gender-matched teachers.

3. The path from reading attitude to reading achievement is not the same for all readers.
4. I hypothesize that students perceive that gender-matched teachers provide a more supportive normative climate than opposite gender teachers. If attitude and behavior are most consistent in normative climates that are perceived to be supportive, then regardless of their reading attitude, gender-matched students perceive the climate to be supportive.

Implications for Schools

While the overall findings from this study are not likely to change school practice in any substantial way, the findings provide insight to the complexity of school children. Viewing their achievement in isolation ignores the notion that students (and their achievement) are influenced by affective and normative factors. Different students could perceive the same classroom situation differently and, therefore, act differently. For example, a girl and boy with the same positive reading attitudes may behave differently for the same male teacher. The findings from this study suggest that the boy is more likely to behave in a manner that is consistent with his reading attitude and, therefore, his reading achievement is more likely to be consistent with his reading attitude.

To be a successful reader takes sustained effort by the reader, so cognitive ability alone does not guarantee success. Affective and normative factors likely interact with ability to determine reading achievement. A better understanding of what conditions help to maximize achievement would be in the best interest of schools and students. This study added to the understanding of those conditions by revealing that reading attitude, an

affective factor, aligns best with reading achievement when students have gender-matched teachers. So, it seems that one implication of the findings for policy might be to find ways to improve students' reading attitudes and then to also assign students to gender-matched teachers. According to the theory, we would expect to see improvements in reading achievement.

Although the relationship found between reading attitude and reading achievement for gender-matched students does not prove causality, it is consistent with the theory that positive reading attitudes lead to more time spent reading, which, in turn, leads to improved reading achievement. If there were predictive value in the reading attitude of a student, it offers an interesting issue for schools. Placing a student in a reading class based on recreational reading attitude would be a reasonable option. Instead of placing students based on ability or achievement data, placing by reading attitude data could result in better attitude-behavior consistency. To get the most benefit, schools could place students with the most positive attitudes with gender-matched teachers and place students with the most negative attitudes with opposite-gender teachers. Better yet, schools could find ways to improve students' reading attitudes and then place them with gender-matched teachers.

Recommendations for Future Research

Because this study did not investigate reading behaviors, the conclusions about reading behaviors are based on prior literature. It would be interesting to investigate the reading behaviors of students with gender-matched and unmatched teachers. While this study has demonstrated that the interaction of student and teacher gender is linked to the

relationship between reading attitude and reading achievement, it has not definitively established that the reason for such differences are due to reading behaviors.

Future research could investigate the differences in the beliefs and reading behaviors of students with gender-matched and unmatched teachers. For example, a study could explore whether matched and unmatched students have different normative beliefs about the teacher or different beliefs about the normative environmental support. If there are differences, further research could explore whether such differences lead to differences in reading behaviors and differences in subsequent reading achievement. Even if there are not differences between matched and unmatched students, to understand why reading attitude is predictive of reading achievement for some students and not others, researchers could track the differences of the reading behaviors of students in normative environments that students perceive to be supportive versus normative environments that students perceive to be unsupportive.

Additionally, future research could investigate whether using a student's recreational reading attitude for placement with a gender-matched or unmatched teacher could benefit the student's reading achievement. To do so, researchers could track the reading achievement for matched and unmatched students. Ideally, researchers would measure each student's recreational reading attitude and reading achievement before placing students randomly with matched or unmatched teachers. Researchers could determine the effectiveness of placing students based on gender and attitude by comparing the change in reading achievement for matched and unmatched students with positive and negative attitudes.

Qualitatively, researchers could investigate classrooms to try to understand the mechanisms of the norms in the classrooms of female and male teachers. To do so, researchers could examine what teacher behaviors contribute most to student normative perceptions about reading. For example, how do female and male teachers act differently toward reading? Do female and male teachers share themselves as readers? Additionally, researchers could investigate the perceptions of students. For instance, what teacher behaviors do students perceive as supportive or unsupportive? Answering such questions may help to understand how students' perceptions ultimately lead attitude-consistent behaviors.

Limitations

The design of this study has led to considerable limitations. For example, because this was a non-experimental, correlational study, I was limited to make inferences about the direction of causal influence. Although my argument is that positive reading attitudes are likely to influence reading achievement, it is possible that strong reading achievement causes students to have more positive reading attitudes. The latter possibility does not help to explain why the relationship between reading attitude and reading achievement is stronger for students with gender-matched teachers.

An additional limitation of this study was its external validity. Because the subjects were not selected randomly and were limited to sixth grade students from the same school, the results may not generalize beyond the school. The Proximal Similarity Model (Trochim & Donnelly, 2008) suggests that conclusions based on this study would generalize to similar age students in similar settings. Under such guidelines, I could argue

that the findings would generalize to the other students in the building and similar aged students in the district or nearby districts with similar demographics. However, I would be far less confident generalizing such findings to middle school students in vastly different settings, such as urban areas.

Although the Elementary Reading Attitude Survey has been established to be a valid and reliable metric for elementary students, the ERAS may have been weaker for measuring the reading attitudes of the sample middle school students. The authors established criterion validity by partly by establishing a positive correlation between students' academic reading attitude and students' achievement scores; however, this relationship was not found for my sample. Although academic reading attitude was not used as a variable for much of the study, it should be noted that it is possible that the ERAS may not have been a valid tool for measuring the academic reading attitude of middle school students.

REFERENCES

- Acock, A.C., & DeFleur, M.L. (1972). A configurational approach to contingent consistency in the attitude-behavior relationship. *American Sociological Review*, 37(6), 714-726.
- ACT, Inc. (2006). Ready for college and ready for work: Same or different? Iowa City, IA: Author.
- Afflerbach, P., & Cho, B.Y. (2011). Classroom assessment of reading. In M.J. Kamil, P.D. Pearson, E.B. Moje, & P.P. Afflerbach (Eds.), *Handbook of reading research* (Vol. IV, pp. 487-514). New York: Routledge.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 84(5), 888.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Alexander, J.E., & Filler, R.C. (1976). *Attitudes and reading*. Newark, DE: International Reading Association.
- Allport, G.W. (1935). Attitudes. In C. Murchison (Ed.) *Handbook of social psychology*, Worcester, MA: Clark University Press.
- Archer, J., & Macrae, M. (1991). Gender perceptions of school subjects among 10-11 year-olds. *British Journal of Educational Psychology*, 61(1), 99-103.

- Baker, L., & Wigfield, A. (1999). Dimensions of children's motivation for reading and their relations to reading activity and reading achievement. *Reading Research Quarterly, 34*(4), 452-476.
- Barnett, J.E., & Irwin, L. (1994). The effects of classroom activities on elementary students' reading attitudes. *Reading Improvement, 31*(2), 113-120.
- Barton, P.E. (1999). *What jobs require: Literacy, education, and training, 1940–2006*. Washington, DC: Educational Testing Service.
- Battin-Pearson, S., Newcomb, M.D., Abbott, R.D., Hill, K.G., Catalano, R.F., & Hawkins, J.D. (2000). Predictors of early high school dropout: A test of five theories. *Journal of Educational Psychology, 92*(3), 568-582.
- Brinn, J., Kraemer, K., Warm, J.S., & Paludi, M.A. (1984). Sex-role preferences in four age levels. *Sex Roles, 11*(9-10), 901-910.
- Bussey, K., & Perry, D.G. (1982). Same-sex imitation: The avoidance of cross-sex models or the acceptance of same-sex models?. *Sex Roles, 8*(7), 773-784.
- Campbell, D.T. (1963) Social attitudes and other acquired behavioral dispositions. In S. Koch (Ed.), *Psychology: A study of science* (Vol. 6, pp. 94-172). New York: McGraw-Hill.
- Cramer, E.H., & Castle, M. (1994). *Fostering the love of reading: The affective domain in reading education*. Newark, DE: International Reading Association.
- Chapman, J.W., & Tunmer, W.E. (1995). Development of young children's reading self-concepts: An examination of emerging subcomponents and their relationship with reading achievement. *Journal of Educational Psychology, 87*(1), 154-167.

- Chapman, J.W., Tunmer, W.E., & Prochnow, J.E. (2000). Early reading-related skills and performance, reading self-concept, and the development of academic self-concept: A longitudinal study. *Journal of Educational Psychology, 92*(4), 703-708.
- Chiu, M.M., & McBride-Chang, C. (2006). Gender, context, and reading: A comparison of students in 43 countries. *Scientific Studies of Reading, 10*(4), 331-362.
- Cloer, C.T. Jr., & Pearman, B. (1993). The relationship of gender to attitudes about academic and recreational reading. In B. Hayes & K. Camperell (Eds.), *Reading: Strategies, practices, and research for the 21st century* (pp. 117-128). Logan UT: American Reading Forum.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd ed.)*. Hillsdale, NJ: Erlbaum.
- Coles, M., & Hall, C. (2002). Gendered readings: Learning from children's reading choices. *Journal of Research in Reading, 25*(1), 96-108.
- Darling-Hammond, L. (2004). Standards, accountability, and school reform. *The Teachers College Record, 106*(6), 1047-1085.
- Dee, T.S. (2005). A teacher like me: Does race, ethnicity, or gender matter?. *American Economic Review, 95*(2) 158-165.
- Dee, T.S. (2007). Teachers and the gender gaps in student achievement. *Journal of Human Resources, 42*(3), 528-554.

- Dieterle, S.G., Guarino, C., Reckase, M.D., & Wooldridge, J.M. (2012). *How do principals assign students to teachers? Finding evidence in administrative data and the implications for value-added*. Paper presented at the Annual Conference of the Association for Education Finance and Policy, Boston.
- Dwyer, C.A. (1974). Influence of children's sex role standards on reading and arithmetic achievement. *Journal of Educational Psychology*, 66(6), 811-816.
- Eagly, A.H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt, Brace, Jovanovich.
- Elley, W.B. (1994). *How in the world do students read?* Hamburg, Germany: International Reading Association.
- Fagot, B.I., & Leinbach, M.D. (1989). The young child's gender schema: Environmental input, internal organization. *Child Development*, 60(3), 663-672.
- Fazio, R.H., & Olson, M.A. (2003). Attitudes: Foundations, functions, and consequences. In M.A. Hogg & J. Cooper (Eds.), *The Sage handbook of social psychology*, 139-160. London: Sage.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7(2), 117-140.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Fredricks, J.A., Blumenfeld, P.C., & Paris, A.H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59-109.

- Gerber, P.J., Ginsberg, R., & Reiff, H.B. (1992). Identifying alterable patterns in employment success for highly successful adults with learning disabilities. *Journal of Learning Disabilities, 25*(8), 475-487.
- Guthrie, J.T., & Greaney, V. (1991). Literacy acts. In R. Barr, M.L. Kamil, P.B. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research* (Vol. II, pp. 68-96). New York: Longman.
- Hoffert, S.L., & Sandberg, J.F. (2001). How American children spend their time. *Journal of Marriage and the Family, 63*(3), 295-308.
- Just, M.A., & Carpenter, P.A. (1987). *The Psychology of reading and language comprehension*. Newton, MA: Allyn & Bacon.
- Kagan, J. (1964). Acquisition and significance of sex typing and sex-role identity. In M.L. Hoffman and L.W. Hoffman (Eds.) *Review of Child Development Research*. New York: Sage Foundation, pp. 151-160.
- Kamil, M.L. (2003). *Adolescents and literacy: Reading for the 21st century*. Washington, DC: Alliance for Excellent Education.
- Kellaghan, T., Madaus, G.F., & Raczek, A.E. (1996). *The use of external examinations to improve student motivation*. American Educational Research Association.
- Kim, M.S., & Hunter, J.E. (1993a). Attitude-behavior relations: A meta-analysis of attitudinal relevance and topic. *Journal of Communication, 43*(1), 101-142.
- Kim, M.S., & Hunter, J.E. (1993b). Relationships among attitudes, behavioral intentions, and behavior a meta-analysis of past research, part 2. *Communication Research, 20*(3), 331-364.

- Kraus, S.J. (1995). Attitudes and the prediction of behavior: A meta-analysis of the empirical literature. *Personality and Social Psychology Bulletin*, 21(1), 58-75.
- Kujawski, J.H., & Bower, T.G.R. (1993). Same-sex preferential looking during infancy as a function of abstract representation. *British Journal of Developmental Psychology*, 11(2), 201-209.
- Kush, J.C., & Watkins, M.W. (1996). Long-term stability of children's attitudes towards reading. *The Journal of Educational Research*, 89(5), 315-319.
- Kush, J.C., Watkins, M.W., & Brookhart, S.M. (2005). The temporal-interactive influence of reading achievement and reading attitude. *Educational Research and Evaluation*, 11(1), 29-44.
- Legewie, J., & DiPrete, T.A. (2012). School context and the gender gap in educational achievement. *American Sociological Review*, 77(3), 463-485.
- Liska, A. (1984). A critical examination of the causal structure of the Fishbein/Ajzen attitude-behavior model. *Social Psychology Quarterly*, 47(1), 61-74.
- Maio, G., & Haddock, G. (2009). *The psychology of attitudes and attitude change*. London: Sage.
- Mancus, D.S. (1992). Influence of male teachers on elementary school children's stereotyping of teacher competence. *Sex roles*, 26(3), 109-128.
- Marinak, B.A., & Gambrell, L.B. (2010). Reading motivation: Exploring the elementary gender gap. *Literacy Research and Instruction*, 49(2), 129-141.

- Mathewson, G.C. (1985). Toward a comprehensive model of affect in the reading process. In H. Singer & R.B. Ruddell (Eds.), *Theoretical models and process of reading* (3rd ed., pp. 841-856). Newark, DE: International Reading Association.
- Mathewson, G.C. (1994). Model of attitude influence upon reading and learning to read. In R.B. Ruddell, M.R. Ruddell, & H. Singer (Eds.), *Theoretical models and process of reading* (4th ed., pp. 1131-1161). Newark, DE: International Reading Association.
- May, R.B., & Ollilia, L.O. (1981). Reading sex-role attitudes in preschoolers. *Reading Research Quarterly*, 16(4), 583-595.
- Mazurkiewicz, A.J. (1960). Social-cultural influences and reading. *Journal of Developmental Reading*, 3(4), 254-263.
- McGuire, W.J. (1985). Attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.) *Handbook of social psychology* (3rd ed., Vol. 2, pp. 233-346). New York: Random House.
- McKenna, E. (1997). *Gender differences in reading attitudes*. (Unpublished master's thesis). Kean College, NJ.
- McKenna, M.C. (1994). Toward a model of reading attitude acquisition. In E.H. Cramer & M. Castle (Eds.), *Fostering the life-long love of reading: The affective domain in reading education* (pp. 18-40). Newark, DE: International Reading Association.

- McKenna, M.C. (2001). Development of reading attitudes. In L. Verhoeven & C.E. Snow (Eds.), *Literacy and motivation: Reading engagement in individuals and groups* (pp. 135-158). Mahwah, NJ: Lawrence Erlbaum Associates.
- McKenna, M.C., Conradi, K., Lawrence, C., Jang, B.G., & Meyer, J.P. (2012). Reading attitudes of middle school students: Results of a US survey. *Reading Research Quarterly, 47*(3), 283-306.
- McKenna, M.C., & Kear, D.J. (1990). Measuring attitude toward reading: A new tool for teachers. *The Reading Teacher, 43*(9), 626-639.
- McKenna, M.C., Kear, D.J., & Ellsworth, R.A. (1995). Children's attitudes toward reading: A national survey. *Reading Research Quarterly, 30*(4), 934-956.
- Millard, E. (1997). Differently literate: Gender identity and the construction of the developing reader. *Gender and Education, 9*(1), 31-48.
- Morgan, P.L., & Fuchs, D. (2007). Is there a bidirectional relationship between children's reading skills and reading motivation? *Exceptional Children, 73*(2), 165-183.
- Mullis, I.V.S., Martin, M.O., Kennedy, A.M., & Foy, P. (2007). *PIRLS 2006 international report: IEA's progress in international reading literacy study in primary schools in 40 countries*. Chestnut Hill, MA: Boston College.
- National Center for Education Statistics (2013). The nation's report card: Trends in academic progress 2012 (NCES 2013-456). Washington, DC: Institute of Education Sciences, U.S. Department of Education.

- Nist, S.L., & Holschuh, J. (2000). Comprehension strategies at the college level. In R. Flippo and D. Caverly (Eds.), *Handbook of college reading and study strategy research* (pp. 75-104). Mahwah, NJ: Erlbaum.
- Nixon, L.A., & Robinson, M.D. (1999). The educational attainment of young women: Role model effects of female high school faculty. *Demography*, 36(2), 185-194.
- No Child Left Behind (NCLB). (2002) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425.
- Northwest Evaluation Association. (2004). Reliability and validity estimates: NWEA achievement level tests and measures of academic progress. Portland, OR: NWEA
- Northwest Evaluation Association. (2011). Measures of academic progress. Portland, OR: NWEA.
- Paradise, L.V., & Wall, S.M. (1986). Children's perceptions of male and female principals and teachers. *Sex Roles*, 14(1), 1-7.
- Paris, S.G., Lawton, T.A., Turner, J.C., & Roth, J.L. (1991). A developmental perspective on standardized achievement testing. *Educational Researcher*, 20(5), 12-20.
- Parker, A., & Paradis, E. (1986). Attitude development toward reading in grades one through six. *Journal of Educational Research*, 79(5), 313-315.
- Pederson, D.M., Shinedling, M.M., & Johnson, D.L. (1968). Effects of examiner and subject on children's quantitative test performance. *Journal of Personality and Social Psychology*, 10(3), 251-254.

- Pennsylvania Department of Education (2014). Pennsylvania System of School Assessment (PSSA). Retrieved from Data Interaction for Pennsylvania Student Assessments website: solutions1.emetric.net/PA/.
- Petscher, Y. (2010). A meta-analysis of the relationship between student attitudes towards reading and achievement in reading. *Journal of Research in Reading, 33*(4), 335-355.
- Perry, D.G., & Bussey, K. (1979). The social learning theory of sex differences: Imitation is alive and well. *Journal of Personality and Social Psychology, 37*(10), 1699-1712.
- Rajecki, D.W. (1990). *Attitudes*. 2nd ed. Sunderland, MA: Sinauer.
- Rayner, K., & Pollatsek, A. (1989). *The psychology of reading*. Englewood Cliff, NJ: Prentice Hall.
- Repetti, R.L. (1984). Determinants of children's sex stereotyping: Parental sex-role traits and television viewing. *Personality and Social Psychology Bulletin, 10*(3), 457-468.
- Ruddell, R.B., & Spence, R. (1985). The interactive reading process: A model. In H. Singer & R.B. Ruddell (Eds.), *Theoretical models and process of reading* (3rd ed., pp. 751-793). Newark, DE: International Reading Association.
- Sainbury, M., & Schagen, I., (2004). Attitudes to reading at ages nine and eleven. *Journal of Research in Reading, 27*(4), 373-386.

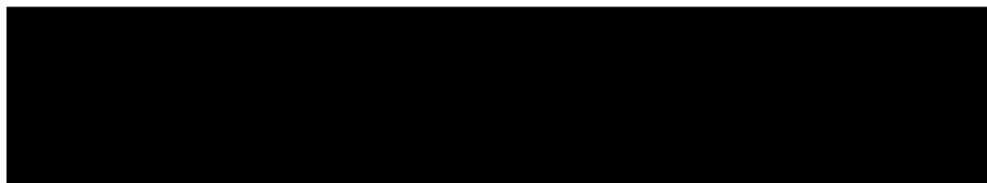
- Schofield, J. (2010). International evidence on ability grouping with curriculum differentiation and the achievement gap in secondary schools. *The Teachers College Record, 112*(5), 8-9.
- Serbin, L.A., Powlishta, K.K., & Gulko, J. (1993). The development of sex typing in middle childhood. *Monographs of the Society for Research in Child Development, 58*(2), 1-74.
- Shapiro, J.E. (1980). Primary children's attitudes toward reading in male and female teachers' classrooms: An exploratory study. *Journal of Literacy Research, 12*(3), 255-257.
- Shapiro, J. (1985). Preprimary children's attitudes toward reading as a sex-role appropriate activity. *The Canadian Journal of Research in Early Childhood Education, 1*, 18-26.
- Shapiro, J. (1990). Sex-role appropriateness of reading and reading instruction. *Reading Psychology: An International Quarterly, 11*(3), 241-269.
- Sheppard, B.H., Hartwick, J., & Warshaw, P.R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research, 15*(3), 325-343.
- Shinedling, M.M. & Pedersen, D.M. (1970) Effects of sex of teacher and student on children's gain in quantitative and verbal performance, *Journal of Psychology, 76*(1), 79-84.
- Simpson, M.L., Hynd, C.R., Nist, S.L., & Burrell, K. (1997). College academic assistance programs and practices. *Educational Psychology Review, 9*(1), 39-87.

- Simpson, M.L., Stahl, N.A., & Francis, M.A. (2004). Reading and learning strategies: Recommendations for the 21st century. *Journal of Developmental Education, 28*(2), 2-15.
- Slavin, R.E. (1987). Ability grouping and student achievement in elementary schools: A best-evidence synthesis. *Review of Educational Research, 57*(3), 293-336.
- Smith, M.C. (1990). A longitudinal investigation of reading attitude development from childhood to adulthood. *Journal of Educational Research, 83*(4), 215-219.
- Stanovich, K.E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21*(4), 360-407.
- Stein, A.H., & Smithells, J. (1969). Age and sex differences in children's sex-role standards about achievement. *Developmental Psychology, 1*(3), 252-259.
- Stevenson, H.W., & Newman, R.S. (1986). Long-term prediction of achievement and attitudes in mathematics and reading. *Child Development, 57*(3), 646-659.
- Stringfield, S., Wayman, J.C., & Yakimowski-Srebnick, M.E. (2005). Scaling up data use in classrooms, schools, and districts. In C. Dede, J.P. Honan, & L.C. Peters (Eds.), *Scaling up success: Lessons learned from technology-based educational improvement* (pp. 133-152). San Francisco: Jossey-Bass.
- Swanson, B.B. (1985). Teacher judgments of first-graders' reading enthusiasm. *Reading Research and Instruction, 25*(1), 41-46.

- Terry, D.J., & Hogg, M.A. (1996). Group norms and the attitude-behavior relationship: A role for group identification. *Personality and Social Psychology Bulletin*, 22(8), 776-793.
- Terry, D.J., Hogg, M.A., & White, K.M. (1999). The theory of planned behaviour: self-identity, social identity and group norms. *British Journal of Social Psychology*, 38(3), 225-244.
- Trochim, W.M.K. & Donnelly, J.P. (2008). *The research methods knowledge base*. Mason, OH: Atomic Dog.
- Tyler-Wood, T., Ellison, A., Lim, O., & Periathiruvadi, S. (2012). Bringing up girls in science (BUGS): The effectiveness of an afterschool environmental science program for increasing female students' interest in science careers. *Journal of Science Education and Technology*, 21(1), 46-55.
- Verhoeven, L., & Snow, C.E. (2001). *Literacy and motivation: Reading engagement in individuals and groups*. Mahwah, NJ: Lawrence Erlbaum.
- Weinraub, M., Clemens, L.P., Sockloff, A., Ethridge, T., Gracely, E., & Meyers, B. (1984). The development of sex role stereotypes in the third year: Relationship to gender labeling, identity, sex-typed toy preference, and family characteristics. *Child Development*, 55(4), 1493-1503.
- Whitehead, J.M. (1996). Sex stereotypes, gender identity and subject choice at A-level. *Educational Research*, 38(2), 147-160.
- Whitfield, E.L., & Whitfield, C. (1982). Sex-Role Stereotyping and Reading Readiness. *Childhood Education*, 58(5), 298-299.

- Wicker, A.W. (1969). Attitudes versus actions: The relationship of verbal and overt behavioral responses to attitude objects. *Journal of Social Issues, 25*(4), 41-78.
- Wigfield, A., & Eccles, J.S. (1992). The development of achievement task values: A theoretical analysis. *Developmental Review, 12*(3), 265-310.
- Wigfield, A., & Guthrie, J.T. (1997). Relations of children's motivation for reading to the amount and breadth of their reading. *Journal of Educational Psychology, 89*(3), 420-432.
- Wilhelm, J.D. & Smith, M.W. (2014). *Reading unbound: Why kids need to read what they want and why we should let them*. New York: Scholastic.
- Zins, J.E., Bloodworth, M.R., Weissberg, R.P., & Walberg, H.J. (2007). The scientific base linking social and emotional learning to school success. *Journal of Educational and Psychological Consultation, 17*(2-3), 191-210.

APPENDIX A – PERMISSION TO USE DATA



May 10, 2013

Re: Authorization to use existing data

Institutional Review Board Coordinator:

I am writing to acknowledge that Nicholas R. Hood has permission to use existing data of students in the [redacted] School District assuming that he follows the human subject research protocols prescribed by the Temple University Institutional Review Board.

If you require further clarification, please do not hesitate to write or call.

Sincerely,



Superintendent of Schools



APPENDIX B – ELEMENTARY READING ATTITUDE SURVEY

1. How do you feel when you read a book on a rainy Saturday?

Very Happy *A Little Happy* *A Little Upset* *Very Upset*

2. How do you feel when you read a book in school during free time?

Very Happy *A Little Happy* *A Little Upset* *Very Upset*

3. How do you feel about reading for fun at home?

Very Happy *A Little Happy* *A Little Upset* *Very Upset*

4. How do you feel about getting a book for a present?

Very Happy *A Little Happy* *A Little Upset* *Very Upset*

5. How do you feel about spending free time reading?

Very Happy *A Little Happy* *A Little Upset* *Very Upset*

6. How do you feel about starting a new book?

Very Happy *A Little Happy* *A Little Upset* *Very Upset*

7. How do you feel about reading during summer vacation?

Very Happy *A Little Happy* *A Little Upset* *Very Upset*

8. How do you feel about reading instead of playing?

Very Happy *A Little Happy* *A Little Upset* *Very Upset*

9. How do you feel about going to the bookstore?

Very Happy *A Little Happy* *A Little Upset* *Very Upset*

10. How do you feel about reading different kinds of books?

Very Happy *A Little Happy* *A Little Upset* *Very Upset*

11. How do you feel when the teacher asks you questions about what you read?

Very Happy A Little Happy A Little Upset Very Upset

12. How do you feel about doing reading workbook pages and worksheets?

Very Happy A Little Happy A Little Upset Very Upset

13. How do you feel about reading in school?

Very Happy A Little Happy A Little Upset Very Upset

14. How do you feel about reading your schoolbooks?

Very Happy A Little Happy A Little Upset Very Upset

15. How do you feel about learning from a book?

Very Happy A Little Happy A Little Upset Very Upset

16. How do you feel when it's time for RELA?

Very Happy A Little Happy A Little Upset Very Upset

17. How do you feel about the stories you read in RELA?

Very Happy A Little Happy A Little Upset Very Upset

18. How do you feel when you read out loud in class?

Very Happy A Little Happy A Little Upset Very Upset

19. How do you feel about using a dictionary?

Very Happy A Little Happy A Little Upset Very Upset

20. How do you feel about taking a reading test?

Very Happy A Little Happy A Little Upset Very Upset