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READING SELF-EFFICACY IN ELEMENTARY-AGE STUDENTS

A Chapter Style Thesis Submitted in Partial Fulfillment of the Requirements for an
Education Specialist Degree in School Psychology

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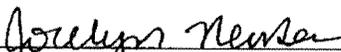
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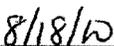
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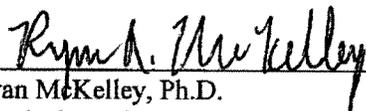
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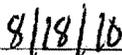
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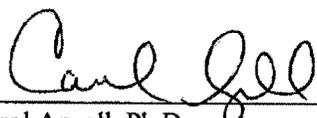
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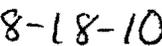
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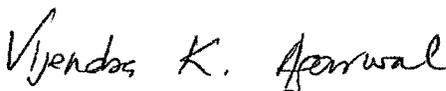


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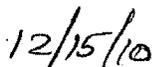


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ABSTRACT

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Reading self-efficacy can have a significant impact on school achievement. Through self-efficacy awareness, school psychologists and other school professionals will be able to identify certain populations that are at risk for low reading self-efficacy and therefore, more at risk for having reading problems. The current study was conducted to examine differences in reading self-efficacy beliefs between males and females and third and fifth grade students. Results indicated that male and female students did not differ in their perceptions of their own reading abilities and that third grade students reported significantly higher perceived reading self-efficacy scores than fifth grade students. Given these findings, increased self-efficacy awareness is warranted in order for schools to better meet the unique needs of each gender and grade level. This information can help schools target populations for prevention and intervention efforts in order to improve students' academic outcomes and later life successes.

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CHAPTER I

LITERATURE REVIEW

*“Whether you think that you can or you can’t,
you’re usually right.” ~ Henry Ford*

*“If I have the belief that I can do it, I shall surely acquire the capacity to do it
even if I may not have it at the beginning.” ~ Mahatma Gandhi*

Introduction

Literacy empowers people to better their lives and the lives of their families and communities. Literacy, which is defined as the ability to read and write, is a fundamental skill that fosters success in children and adults. In today’s society, the number of jobs requiring post-secondary education is continually rising (Stodden & Dowrick, 1999). Thus, the American citizen’s ability to read and succeed in school, as well as their future employment and general contribution to society, are becoming increasingly dependent on this skill. Among unemployed adults in the U.S., the illiteracy rate is 75% (Violence Prevention and Treatment, Inc., n.d.).

While illiteracy is an unseen problem, its impact is profound. According to the United States Department of Education, illiteracy is correlated with low self-esteem, school dropouts, unemployment, poverty, and crime (Laird, Lew, DeBell, & Chapman, 2006). Dropping out of school can even lead to poor health, as adults over the age of 24 who dropped out of school tended to report being in worse health than adults who were

not dropouts, regardless of income (Laird, Lew, DeBell, & Chapman). Statistics show that 85% of all juvenile offenders have reading problems and 60% of prison inmates are illiterate (Literacy Volunteers of Tuscon, 2010). These statistics illustrate the extremely adverse effects of illiteracy on children and adults.

Research has shown that reading problems can contribute to academic failure and a trajectory of negative behaviors. The Violence Prevention and Treatment group (n.d.) identified many negative outcomes of reading problems. Specifically in school, children who exhibit low reading achievement by third grade have a greater likelihood of being retained in school, dropout, drug abuse, early pregnancy, delinquency, and unemployment. Further, they discovered that if the reading difficulty is not identified and remediated by the time a child enters third grade, there is a 75% probability that the child will continue to exhibit significant underachievement in reading throughout the elementary school years (Violence Prevention and Treatment, Inc.). In later years, reading competence by grade four is one of the best predictors of finishing high school, becoming employable, having successful adult adjustment, and avoiding problems with the law (Violence Prevention and Treatment, Inc.).

Although we know literacy is important, many students are not meeting state and national standards in reading. Based on the 2006-2007 results from the National Assessment of Educational Progress (NAEP), 68% of students nationwide performed below proficiency, lacking academic competence in reading, and 34% of students performed below the basic level, demonstrating very limited academic knowledge and skills in reading (Wisconsin Department of Public Instruction, 2007). As outlined previously, students that exhibit low performance in reading are at risk for having long-

lasting reading problems if their difficulties are not addressed. Schools are in the position to identify factors contributing to students' academic problems and provide them with additional support. By identifying and targeting contributing factors, schools can help students succeed by providing support for the specific areas that hinder their performance. Many factors contribute to students' reading performance, including their reading ability, prior instruction in reading and exposure to reading materials, attention and effort on reading tasks, as well as their beliefs about their reading abilities (Abedi et al., 2009; Pajares, 1996). There is growing consensus that a child's social and emotional development is just as important to his or her academic success as is cognitive development (Liew, McTigue, Barrois, & Hughes, 2008; Shonkoff & Phillips, 2000). In particular, research has shown that students' beliefs about their own ability to perform on certain tasks can have a major influence on students' academic achievement (Pajares). Essentially, in order for students to perform well on academic tasks, they must first believe that they can do well and succeed. These beliefs are referred to as self-efficacy.

Self-efficacy

Albert Bandura (1977) defines self-efficacy as one's belief about his or her ability to perform in a particular situation. It involves the individual's judgment about whether he or she can perform an activity, such as read a book, solve a multiplication problem, or ride a bicycle. The beliefs that individuals have about their own abilities influence the choices they make and endeavors they pursue. In other words, people choose tasks in which they feel competent and avoid those in which they do not feel competent (Pajares, 1996). For example, a student who believes he or she can read very well has high self-

efficacy in this area. The student may enjoy reading books for leisure, whereas a student who feels he or she is a poor reader may avoid reading altogether.

Self-efficacy also influences how much effort individuals will expend on an activity, how long they will persevere when confronted with obstacles, and how resilient they will be when faced with adverse situations (Usher & Pajares, 2008). This has important implications for schools because a student's ability to persevere through challenges can improve his or her learning and performance (Osher et al., 2008). A study that examined children's math ability and math self-efficacy concluded that ability was related to performance (Collins, 1982). However, when controlling for ability, children with high self-efficacy completed more problems correctly and persisted longer by reworking more of the problems they missed. Similarly, studies of college students demonstrated that high self-efficacy influences students' academic persistence required for maintaining high achievement (Lent, Brown, & Larkin, 1986). The higher a student's sense of self-efficacy, the greater the effort, persistence, and resilience the student will demonstrate (Pajares, 1996). In addition, high self-efficacy will facilitate greater interest and engagement which will subsequently enhance learning and achievement. Conversely, low self-efficacy can subtract from one's effort and engagement and become detrimental to achievement (Pajares). For this reason, awareness of students' self-efficacy should be a fundamental component of learning environments.

It may be important for teachers to monitor self-efficacy and promote its development among their students. Researchers have conducted experimental studies to examine the effects of self-efficacy feedback on performance. One such study assigned students who were struggling academically to two different treatment groups (Pintrich &

Schunk, 1996). The first group received remedial instruction and practice and the second group received the same instruction, along with feedback intended to increase their self-efficacy. Results from this study showed a greater improvement in students' self-efficacy, effort, persistence, and performance in the latter group, demonstrating the positive effects of giving students feedback that promotes their self-efficacy (Pintrich & Schunk).

In order to understand and generate strong self-efficacy beliefs in students, it is important to consider how it develops. Bandura stated that individuals base their self-beliefs on how they interpret their prior accomplishments, which shapes their behavior, environment, and future success (Pajares, 1996). Figure 1 depicts the foundation of Bandura's concept of reciprocal determinism, the idea that there is a reciprocal interaction between one's personal processes (e.g., emotions, interest, learning), behavioral factors (e.g., effort, persistence), and environmental factors (e.g., classroom environment, interactions with teachers) (Cleary, 2009; Pajares).

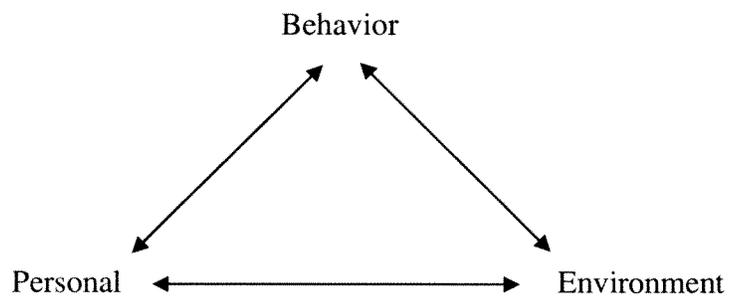


Figure 1. Bandura's reciprocal determinism, adapted from information in Pajares (1996)

Strategies for improving self-efficacy and performance can be aimed at these three factors. In school, for example, teachers can strive to improve the academic skills and the confidence of their students by helping them improve their emotional states,

correcting their inaccurate self-beliefs and self-regulatory practices, and changing the classroom environment to foster their success (Pajares, 1996).

Academic Self-efficacy

One might expect students' past academic performance to best predict their future performance. However, some research has shown that self-efficacy is a better predictor of performance (Pajares, 1996). A correlational study surveyed students' reading and math self-efficacy and then asked them to perform reading and math tasks (Linnenbrink & Pintrich, 2003). Results from these studies provide evidence that self-efficacy judgments better predict students' effort, persistence, and even task performance, than does students' prior knowledge. That is, even students who have prior knowledge of the material and the ability to perform the task are less likely to put forth effort and persist at the task if they lack the confidence that they can use their knowledge and skills. Another study concluded that students who believe they are capable of performing academic tasks use more cognitive (e.g., understanding a text) and metacognitive (e.g., planning, evaluating) strategies and persist longer than those who do not (Pintrich & Garcia, 1991). In addition, academic self-efficacy was found to be correlated with academic performances such as grades, in-class seatwork, homework, exams, essays, and reports (Pintrich & De Groot, 1990).

Self-efficacy also influences thought patterns and emotional reactions. Students with high academic self-efficacy are more likely to experience positive emotions, such as pride and feelings of competence that help them to be successful in academic contexts (Pajares and Valiante, 1999). They will have more optimism and lower levels of apprehension when approaching academic tasks (Pajares & Valiante). Conversely,

students with low academic self-efficacy are more likely to experience negative emotions, such as anxiety and depression, and believe things are more difficult than they actually are (Linnenbrink & Pintrich, 2003). These thought patterns and emotions affect students' academic achievement. Therefore, it is important to recognize when students are experiencing low academic self-efficacy in order to provide them with support and prevent negative impacts on academic performance.

Gender and Grade Level Differences

Previous research has shown that there may be certain populations of students that are more at risk for low self-efficacy. Having the knowledge of which students are more likely to experience low self-efficacy can help identify groups of students particularly at risk for learning and achievement problems. In an attempt to identify potential populations that are at risk for having low self-efficacy, one area of research examines gender differences in self-efficacy. If males or females are identified as more at risk for low self-efficacy, this could have significant implications for the kinds of support teachers provide students in school. One study examined gender differences among the relationship between self-perceptions in four domains (self-esteem, racial self-esteem, academic self-efficacy, and importance of school completion to self) and two academic outcomes (intentions to complete the school year and grade point average) (Saunders, Davis, Williams, & Williams, 2004). Participants in this study were African American sophomores in high school who responded to questionnaires at the beginning of the school year that surveyed their self-perceptions and intentions to complete the school year.

Results from this study demonstrated that African American females, when compared to their male peers, had significantly higher levels of academic self-efficacy and placed greater importance on completing the school year. However, there were no gender differences in the relationship between self-perceptions and intentions to complete the school year, suggesting that females simply reported higher levels of these measures (Saunders et al., 2004). This may be associated with the finding that females in this study had higher overall grade point averages (GPA). Previous research has shown that females are more frequently reinforced for their effort in school and, therefore, are more likely to develop greater academic skills (Saunders et al.).

For both male and female students, academic self-efficacy was significantly correlated with grade point averages and intentions to complete the school year, which indicates that academic self-efficacy was a significant predictor of these positive academic outcomes (Saunders et al., 2004). It is interesting to note that academic self-efficacy was a much stronger predictor of GPA for females than males, suggesting that females' beliefs about their academic ability are more important factors in predicting academic achievement.

Other studies have looked at both gender and grade level differences in self-efficacy. A longitudinal study explored self-efficacy beliefs as predictors of life satisfaction in late adolescence (Vecchio, Gerbino, Pastorelli, Del Bove, & Caprara, 2007). They administered an academic self-efficacy measure to the participants when they were in middle school and again five years later, along with a life satisfaction scale.

Results of this study indicated that females showed higher academic self-efficacy beliefs than males, both initially and during the follow-up study. For both genders,

academic self-efficacy beliefs decreased significantly over the course of five years (Vecchio et al., 2007). This supports findings from previous research that academic self-efficacy beliefs tend to decrease over time due to the increasing pressure and demands on youths' academic performance as they encounter more challenging school tasks. When analyzed further, the data showed that while both males' and females' beliefs decreased over time, males showed a greater decline of academic self-efficacy beliefs than females (Vecchio et al.). That is, males' self-efficacy beliefs changed more over the five-year span.

In addition, the researchers found that academic self-efficacy beliefs were significantly and positively associated with later life satisfaction in both males and females (Vecchio et al., 2007). In other words, participants who initially judged themselves as more capable of performing academic tasks experienced a higher level of life satisfaction five years later. Also, the less self-efficacy beliefs decreased over time, the more satisfied participants were with their lives five years later (Vecchio et al.). The results of this study demonstrate the large influence that self-efficacy beliefs have on later life satisfaction, particularly in males. In fact, self-efficacy beliefs accounted for life satisfaction more than academic performance. For these reasons, it is essential to promote the development of self-efficacy beliefs early on in children's development.

Another study explored writing self-efficacy among middle school students (Pajares & Valiante, 1999). The researchers examined gender and grade level differences between sixth, seventh, and eighth grade students, as well as whether their writing self-efficacy beliefs could predict their writing competence. In this study, the researchers defined writing self-efficacy as "students' judgments of their confidence that they possess

the various composition, grammar, usage, and mechanical skills appropriate to their academic level” (Pajares & Valiante, p. 394). Language arts teachers rated students’ writing competence.

Results from this study indicated that the students’ writing self-efficacy predicted their writing competence, which confirms the influence of academic self-efficacy beliefs (Pajares & Valiante, 1999). When the researchers examined grade level differences among the middle school participants, they found that sixth graders reported the strongest self-efficacy beliefs, seventh graders reported the weakest, and eighth graders had self-efficacy levels between sixth and seventh graders. The males and females in the study did not differ in their writing self-efficacy beliefs. However, their responses to questions about how their ability compared with those of other students in their class indicated that all students expressed females had greater superiority in writing than males in their class and in their school. The authors noted that it was interesting that both genders believed that females were superior writers when they expressed equal writing self-efficacy beliefs. These findings could suggest that males and females have internalized biases stemming from the way they are socialized differently based on their gender. Other researchers suggested that the gender stereotypes that students hold can help explain gender differences in academic self-beliefs (Eisenberg, Martin, and Fabes, 1997). Gender bias is part of the hidden curriculum that is taught to students through the everyday functioning of their classrooms. It is embedded in textbooks, lessons, and teacher interactions with students (Chapman, 2010).

One study examining gender differences in reading interests among fourth grade students explained that males are afraid of being labeled un-masculine if they enjoy

reading (Merisuo-Storm, 2006). In this study, males were generally more selective than females in the types of books they read. Their first choice was comic books, followed by humorous stories and adventure books. Females liked adventure books best, although they have been traditionally regarded as “boy books,” followed by humorous stories and comics (Merisuo-Storm). In addition, males reported that they would not enjoy reading fairytales, females reported that they would not like to read non-fiction, and poetry was unpopular for both genders.

This socialization of gender roles could lead to differences in reading self-efficacy by creating gender differences in students' attitudes toward reading. In a study that examined male and female attitudes toward reading found that fourth grade females enjoyed reading far more than males (Merisuo-Storm, 2006). These attitudes can affect the amount of books students read. According to a national survey in 2000, sixth grade girls read twice as many books as boys (Korkeakoski, 2001). This perpetuates the cycle of reading problems because when children read less, their reading skills will develop more slowly which can negatively influence their reading self-efficacy. There are many additional factors that can affect gender and grade level differences in self-efficacy. Regardless of these influences, it is important to be aware of and monitor self-efficacy beliefs among students.

Limitations in Self-efficacy Research

Although much research exists regarding academic self-efficacy, there are limitations with the current research base. One clear limitation is the inconsistency in previous findings relating to grade level and gender differences. Relatively few studies have examined the self-efficacy beliefs of younger children. Investigations are needed

among students in elementary school, since this may be the time when academic self-beliefs are formulated. Also, there have been limited studies in the area of reading self-efficacy. Research in this area is very important, since reading is such an essential skill for future learning and success. In general, students are learning to read until about third or fourth grade, when they experience a transition to 'reading to learn' or 'reading for information' (Evitt, 2010). Therefore, there is a need for further research on this transitional period in academic development.

Purpose and Significance of Study

The current study will examine the differences in reading self-efficacy between male and female and third and fifth grade students. The results will help strengthen the knowledge base about potential gender or grade level differences in reading self-efficacy, as well as overall reports of reading self-efficacy beliefs among elementary-age students. The purpose of this study is to potentially identify certain populations that may be more at risk for having low reading self-efficacy and thus, more at risk for reading problems. This identification can increase our understanding of these differences in schools in order to better meet the unique needs of each gender and grade level. Once students are identified, they can be provided with extra support to increase their success in reading. This will help students improve their academic achievement in other subjects as well, since success in reading appears to be the gateway to success in other academic areas (Colker, 2010). Another reason for the early identification and monitoring of students who have low self-efficacy is the impact it has on other areas of life besides school performance, such as life satisfaction (Vecchio et al., 2007). Therefore, it is important for students to develop positive self-efficacy early on in their academic experiences.

More information is needed on which populations to target with additional support for improving self-efficacy.

Information from this study is important for school psychologists, teachers, and other school professionals to be aware of, as it may have significant implications for prevention and intervention efforts for specific groups of children in elementary school settings. According to the National Association of School Psychologists (2009), part of a school psychologist's role is to collaborate with a range of individuals to address the behavioral, social, emotional, and academic needs of all students. School psychologists can address students' emotional and academic needs by helping to identify children with low self-efficacy, consulting with teachers on effective methods of facilitating students' self-efficacy, and promoting a healthy school environment. Given that teachers interact with students on a daily basis, they are in an ideal position to monitor and promote high self-efficacy among their students.

Prevention and intervention efforts can be targeted to the three areas of Bandura's reciprocal determinism. Environmental factors have an impact on self-efficacy (Pajares, 1996). Therefore, to facilitate self-efficacy among students, schools could provide a supportive culture that promotes feelings of competence and success, and teachers could build a classroom environment that reinforces students' effort and persistence. These methods can help prevent students from developing low self-efficacy, therefore helping to prevent academic problems. As discussed previously, teachers can give students feedback to facilitate their self-efficacy, as it has been shown to improve their motivation and performance on tasks (Pintrich & Schunk, 1996). Parent support also influences students' self-efficacy (Cleary, 2009). Therefore, parents can provide their children with

positive support and encouragement regarding their academic competence in order to increase their academic self-efficacy. Students could benefit from assistance with correcting their inaccurate self-beliefs and regulating their emotional states (Pajares). Overall, prevention and intervention efforts should be targeted to students that are known to be more at risk for having low self-efficacy. The goal of this study is to determine the levels of reading self-efficacy among third and fifth grade male and female students.

Research Question

Do students differ in their reading self-efficacy beliefs as a function of gender (males/females) and/or grade level (third/fifth)?

Hypotheses

Based on the research just reviewed, it is hypothesized that in this sample, female students will have higher reading self-efficacy beliefs than male students. Additionally, it is hypothesized that third grade students will have higher reading self-efficacy beliefs than fifth grade students.

CHAPTER II

METHODOLOGY

Research has indicated that low academic self-efficacy negatively affects students' academic performance. Specifically, low reading self-efficacy can lead to reading problems, which may be especially true for certain populations of students. Therefore, it is important to study various populations of students in order to identify which may be more at risk for low self-efficacy. The current study investigates the potential differences in reading self-efficacy as a function of gender (males vs. females) or grade level (third vs. fifth grade).

Participants

Participants in this study were elementary school students from general education classrooms in three different elementary schools within two school districts located in small Midwestern towns. Racial, socioeconomic, and English proficiency data from these three schools are summarized in Table 1. This population is fairly homogenous, with over 90% of students from Caucasian descent. The percent of economically disadvantaged students within these three schools ranged from 24.3 to 33.2% (Wisconsin Department of Public Instruction, 2010).

Table 1. Racial, Socioeconomic, and English Proficiency Data (Wisconsin Department of Public Instruction, 2010)

		School A	School B	School C
Race	White Non-Hispanic	97.2%	95.1%	93.4%
	Hispanic	1.4%	1.6%	1.8%
	Black Non-Hispanic	0.3%	0.7%	2.2%
	Asian	1.0%	1.0%	1.3%
	American Indian	0.0%	1.6%	1.2%
Socioeconomic Status	Economically Disadvantaged	33.2%	26.1%	24.3%
English Proficiency	Limited English Proficient	1.3%	0.0%	0.5%

In the current study, there were 249 total participants (116 males, 133 females; 105 third graders, and 144 fifth graders). A convenience sampling procedure was used to select participants. All students in the targeted grades were invited to participate in the study. Students that did not participate were either not present on the day of data collection or their parents/guardians did not return signed consent forms.

Procedure

Data for the current study were obtained as part of a larger project involving math self-efficacy. Only the results on reading self-efficacy were reported in this study. Before data collection, the researchers obtained approval from the University of Wisconsin – La Crosse Institutional Review Board (IRB) and administrators at the participating school districts. Parental consent for the students to participate involved

sending a letter home to the parent or guardian of all third and fifth grade students, requesting that the parents sign and return the letter if they would like their children to participate in the study (See Appendix A). A 60% response rate was obtained for this study (426 letters were sent home to parents and 255 were signed and returned).

Data were collected in two stages, four months apart, during the school day in students' general education classrooms. Participants were group-administered a Reading Curriculum-Based Measurement (CBM) followed by a reading self-efficacy questionnaire. The reason for administering the CBM and questionnaire in this order was to prime students with a grade-level reading passage to give them a point of reference for the questions asked on the self-efficacy questionnaire. The procedure took approximately 15 minutes per classroom.

Measures

The Reading CBM used in this study is part of the AIMSweb (Achievement Improvement Monitoring System) system's Standard Maze Passages for third and fifth grade (Pearson, Inc., 2002). It involved reading a passage for three minutes. Every seventh word was replaced with three words inside parentheses and students were asked to circle the best word that made sense in the story. This measure is intended to be a brief assessment of reading comprehension. AIMSweb measures were researched with respect to psychometric properties of reliability and validity and yield accurate outcomes when standardized testing procedures are implemented.

The self-efficacy questionnaire was an adapted version of Bandura's Children's Self-efficacy Scale (Bandura, 2006) and asked students to respond to questions regarding their self-efficacy beliefs in the area of reading (See Appendix B). The eight items

assessed students' beliefs about their ability to perform in various types of reading tasks, such as taking a reading test, doing reading homework, and understanding what they read. The self-report questionnaire used a five-point Likert scale ranging from (1) *cannot do at all* to (5) *can definitely do well*. Reliability analyses from a pilot study indicated a Cronbach's Alpha of .70, therefore finding it to be a reliable measure of reading self-efficacy. There were also two demographics questions at the end of the questionnaire for students to indicate whether they were male or female and whether they were in third or fifth grade.

Data Analysis

The dependent variable in this study was reading self-efficacy and the independent variables were gender and grade level. An analysis of covariance (ANCOVA) procedure was conducted to determine if the participants differed in their reports of reading self-efficacy as a function of their gender or grade level. The data analyzed were students' total scores from their self-efficacy ratings on the questionnaire.

CHAPTER III

RESULTS

The current study was conducted to examine differences in reading self-efficacy beliefs between males and females and third and fifth grade students. The results of this study are important in order to identify certain populations that may be more at risk for having low reading self-efficacy. To address study purposes, participants completed a Reading Curriculum-Based Measurement (CBM), immediately followed by a reading self-efficacy questionnaire. This chapter will begin with a description of demographic information of the research study population, followed by a presentation of the results of the preliminary analyses as well as results of the main analyses, addressing the hypotheses of the study.

Demographics

All demographic information was collected through student self-report. A total of 247 students participated in this study. A summary of the student demographic information (i.e., grade and gender) is presented in Table 2. Data were collected in January, 2010 from Schools A and B and in May, 2010 from School C. 32 (12.9%) students were from School A, 53 (21.3%) were from School B, and 164 (61.9%) were from School C.

Table 2. Demographic Information

	Males	Females	Total
3 rd Grade	46	57	103
5 th Grade	69	75	144
Total	115	132	247

Preliminary Analyses

Before the primary research questions of the current study could be addressed, reliability analyses were conducted for the eight-item self-efficacy questionnaire. Cronbach's Alpha values were calculated with an internal consistency reliability of .78, exceeding the recommendation of .70 for measures intended for group data purposes (Ysseldyke, 2007). Therefore, the questionnaire was found to be a reliable measure of reading self-efficacy.

Due to the fact that data were collected at two different points during the school year, it was possible that study participants could have differed on the dependent variable (reading self-efficacy) based upon when they completed the survey. An independent samples t-test conducted revealed that the participants from Time 1 ($M=35.2$) and Time 2 ($M=35.6$) did not differ significantly in their self-efficacy beliefs, $t(245) = -.9, p=.368$. In addition, a one-way analysis of variance (ANOVA) was conducted to determine whether there were differences in reading self-efficacy beliefs across student participants in the three schools used in the study. There were no significant differences between School A ($M=35.3$), School B ($M=35.1$), and School C ($M=35.6$), $F(2, 244)=.42, p=.661$. Therefore, all participants were analyzed together to address the main analyses of this study.

A correlation analysis was conducted to determine the correlations between the independent variables (grade and gender) and the dependent variables (reading self-efficacy and CBM scores). The correlations are summarized in Table 3. The Reading CBM scores were significantly correlated with grade, gender, and reading self-efficacy.

Table 3. Correlation Matrix

	Grade	Gender	Reading Self-efficacy	Reading CBM
Grade	--	-.031	-.048	.512**
Gender		--	.113	.197**
Reading Self-efficacy			--	.271**
Reading CBM				--

** = Correlation is significant at the .01 level (2-tailed)

Main Analyses

The primary purpose of this study was to determine if there were differences in students' reading self-efficacy as a function of their gender (male/female) and/or grade level (third/fifth). An analysis of covariance (ANCOVA) was used to determine if the participants differed in their reports of reading self-efficacy after controlling for differences in measured reading skill. The independent variables for this analysis were the student's gender (male or female) and grade (third or fifth). The dependent variable was the student's total score on the reading self-efficacy questionnaire. The covariate was the Reading CBM score, which was a measure of reading skill. Assumptions of the ANCOVA were checked and met. Results of the ANCOVA revealed that after controlling for the students' measured reading performance, there was no interaction effect between grade and gender, $F(1, 242)=.12, p=.92$. There was also no significant difference in reading self-efficacy between male and female students, $F(1, 242)=.16, p=.69$. When looking at differences according to grade, the ANCOVA was significant,

$F(1, 242)=12.09, p=.001$. Specifically, after controlling for reading skill level, third grade students reported higher self-efficacy scores as compared to fifth grade students. Table 4 summarizes the results of the ANCOVA. Table 5 presents the means and standard deviations for 3rd and 5th grade students on reading self-efficacy before and after controlling for reading skill level.

Table 4. Analysis of Covariance for Reading Self-efficacy as a Function of Grade and Gender, Using Reading Skill Level as a Covariate

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η^2
Reading CBM Score	1	344.39	29.29	.000	.11
Grade	1	142.12	12.09	.001	.048
Gender	1	1.89	.16	.69	.001
Error	242	11.76			

Table 5. Adjusted and Unadjusted Grade Means and Variability for Reading Self-efficacy Using Reading Skill Level as a Covariate

	<i>N</i>	<i>Unadjusted</i>		<i>Adjusted</i>	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
3 rd Grade	103	35.68	3.89	36.53	.38
5 th Grade	104	35.33	3.43	34.71	.31

CHAPTER IV

DISCUSSION

The purpose of the current study was to examine differences in reading self-efficacy beliefs between males and females and third and fifth grade students when controlling for performance in order to identify potential populations that are more at risk for having low self-efficacy in reading. Students' self-efficacy beliefs were elicited by administering a reading self-efficacy questionnaire following a Reading Curriculum-Based Measurement (CBM). Differences in self-efficacy beliefs suggest that the population with lower self-efficacy beliefs may be more at risk for having low reading achievement, as research has shown that self-efficacy beliefs have a major influence on one's performance (Pajares, 1996). This information can help schools target populations for prevention and intervention efforts in order to improve students' academic outcomes and later life successes.

The results of the current study add to existing research on gender and grade level differences in academic self-efficacy, specifically in the area of reading. This chapter will discuss the main findings of this study, followed by implications for schools and the practice of school psychology, as well as limitations of the study and suggestions for future research.

The main analyses of this study were conducted to determine if participants differed in their reports of reading self-efficacy as a function of grade and gender, when controlling for reading performance. In addition, by administering the Curriculum-Based

Measurement (CBM) immediately before giving students the reading self-efficacy questionnaire, the researchers intended to prime students with a reading passage at grade-level. In the following paragraphs, the results of the analyses are presented relative to the two hypotheses proposed within this study.

Gender Analyses

The first hypotheses proposed that female students would report higher self-efficacy beliefs than male students. The ANCOVA results revealed that, when controlling for performance, there was no significant difference between male and female participants, indicating that male and female students did not differ in their perceptions of their own reading abilities. These results are consistent with the results of previous research (Pajares & Valiante, 1999), which found no significant differences between male and female reports of self-efficacy.

However, the current results contradict other studies that have shown that female students have higher self-efficacy than male students. For instance, Saunders et al. (2004) explored academic self-efficacy among African-American high school students and found that females had significantly higher levels of self-efficacy than their male counterparts. In addition, the current results contradict those of the longitudinal study, which found female academic self-efficacy to be higher than male self-efficacy both initially and five years later (Vecchio et al., 2007). Although there are many factors that contribute to students' reading success, including prior educational experience, reading ability, as well as attention and effort on tasks (Abedi et al., 2009; Pajares, 1996), previous research has demonstrated that one's self-efficacy beliefs influence the ability to succeed (Pajares). Therefore, based on the current results regarding gender differences,

male and female students within this sample are equally as likely to reach their academic potential in reading. However, based on the results of previous literature, it may be necessary to target males for prevention and intervention efforts in schools.

The current findings may differ from previous research findings due to the age differences of the participants. It is possible that over time, students become more socialized to participate in particular activities according to their gender, as the influence of peers becomes more powerful. For example, females may be socialized and encouraged to read more than males. This could explain why previous research has shown significant gender differences in self-efficacy among older students but the current study revealed no significant differences among male and female elementary students. There may also be differences in the perceived failure of students at different ages. Older students may be better able to recognize when they are not successful at a given task, which could lead to greater differences in self-efficacy.

Grade Level Analyses

The second hypothesis guiding the analyses of this study examined the grade level of participants relative to their self-efficacy beliefs. Specifically, it was hypothesized that third grade students would report higher perceived self-efficacy than fifth grade students. The results of the ANCOVA revealed that, when controlling for performance, third grade students reported significantly higher perceived self-efficacy scores than the fifth grade students within this sample. This finding is consistent with other research studies that have shown that self-efficacy generally decreases over time. The longitudinal study found that perceived academic self-efficacy decreased significantly over the course of five years (Vecchio et al., 2007). Another study revealed that among middle school

students, sixth graders had higher self-efficacy than seventh and eighth graders (Pajares & Valiante, 1999).

One possible explanation for this decline in self-efficacy is the increased educational pressure and demands that students face in school, which may challenge their level of confidence in their academic capacities (Vecchio et al., 2007). As they progress through each grade, the level of academic difficulty increases as the curriculum becomes more challenging. This may have a negative influence on students' perceptions of their abilities and could account for the decrease in self-efficacy over time. It is also likely that students simply develop more accuracy in judging their own abilities (Vecchio et al.). Students develop greater insight into their strengths and weaknesses with the development of greater cognitive capacity and the acquisition of more academic experiences. Regardless of the reasons for the decline in self-efficacy, schools need to take the necessary actions to foster and maintain students' self-efficacy early on in their education, especially with the information that higher self-efficacy beliefs can lead to greater life satisfaction later on (Vecchio et al.).

Implications of the Current Study

Due to the influence that self-efficacy has on one's accomplishments, students' academic success is in part determined by what they believe they can achieve (Pajares & Valiante, 1999). When students believe they can produce desired results, they will have more motivation and perseverance when approaching difficult tasks. Therefore, high levels of self-efficacy can maximize the level of success students ultimately achieve (Pajares & Valiante) and allow them to navigate through challenges and create a successful life course for themselves (Vecchio et al., 2007).

Teachers and parents will readily attest to the fact that there are situations in which inaccurate self-beliefs, rather than a weak knowledge base or inadequate skills, are responsible for students shortchanging themselves academically. In these cases, identifying, challenging, and altering inaccurate judgments are essential to academic success and adaptive functioning (Pajares & Valiante, 1999, p. 401).

Since the results of the current study indicated that self-efficacy decreases significantly with age, efforts to foster students' self-efficacy should begin as soon as children enter school and should persist throughout their education. Reading competence by the time a student reaches fourth grade is critical, as reading problems can persist and lead to a negative life trajectory (Violence Prevention and Treatment, Inc., n.d.). Therefore, students' self-efficacy should be closely monitored, especially in the later elementary school years. Schools should take action to prevent low self-efficacy among students and to intervene when low self-efficacy is identified.

Prevention and intervention efforts can be aimed at each of the three areas of Bandura's concept of reciprocal determinism (environmental, behavioral, and personal). Environmental factors have a major influence on students, some of which include the school culture, classroom environment and instruction, teacher and parent interactions, and books that students read. The school culture and classroom environment should promote feelings of optimism, competence, and success. Shifting the focus from students' weaknesses or what they did wrong to focusing on their strengths and potential for success can help enhance self-efficacy. Schools can implement school-wide programs that foster self-efficacy, such as Positive Behavior Interventions and Supports (PBIS), which helps develop a positive school environment (OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports, 2010). Schools can also adopt reading programs that build students' sense of efficacy in reading, along with their

reading skills. In addition, when parents hold high expectations for academic achievement and provide their children with positive encouragement and praise about their academic competence, it can help facilitate their children's self-efficacy.

The classroom should be an environment in which students are reinforced for their effort on tasks and given frequent feedback that promotes their self-efficacy. Helping students improve their effort on classroom activities targets the behavioral factor of Bandura's reciprocal determinism. Self-efficacy is enhanced through mastery experiences (Pajares & Valiante, 1999). Therefore, teachers should provide plenty of opportunities for students to experience success in the classroom. Another way to target the behavioral factor is to teach students how to find books that capture their interest so they become more invested in the story and thus, develop an interest in reading more books.

To address the personal factor of reciprocal determinism, schools can provide students with instruction on correcting their inaccurate beliefs regarding their academic competence and improving their levels of self-efficacy. By teaching them positive self-talk, such as thinking "I can do this," students can raise their self-efficacy beliefs and consequently improve their performance. Again, this instruction should occur very early in an attempt to instill high self-efficacy among young students. Teachers should continue to teach these strategies as students age, so that they maintain positive self-efficacy.

Part of the role of school psychologists is to address students' emotional needs. School psychologists can assess the self-efficacy of the students in their schools in order to identify the populations or specific students who may be at risk for having low self-

efficacy. They can collaborate with teachers to monitor and improve self-efficacy beliefs among these students and as a result, improve academic outcomes. One way to monitor self-efficacy beliefs among students is to administer a self-efficacy questionnaire at the beginning of each school year and/or at certain times throughout the year. This data can inform staff of certain grade levels or populations within the school that may need additional support to boost their self-efficacy. School psychologists should advocate that students receive the emotional supports they need to be successful in school, which includes advocating for their self-efficacy. This could include educating teachers and parents on the impact that self-efficacy has on students' performance and later life satisfaction. Through early identification of low self-efficacy, schools can provide support and interventions to those at risk and help prevent reading problems from developing.

As outlined previously, reading competence by fourth grade is one of the best predictors of graduating high school and having later life success (Violence Prevention and Treatment, Inc., n.d.). On the other hand, reading problems can lead to a multitude of negative outcomes that are detrimental to students and society, such as school retention and dropout, crime, drug abuse, unemployment, poverty, and poor health (Laird, Lew, DeBell, & Chapman, 2006; Violence Prevention and Treatment, Inc.). Since the majority of reading problems persist throughout students' education, it is essential to provide students with remedial support early. Teachers, school psychologists, and other school professionals can do this by learning what factors are critical to students' success in reading and finding ways to influence those factors to improve reading achievement. Self-efficacy is one factor that has a significant effect on reading performance and can be

targeted to help improve students' success in reading. By improving students' reading self-efficacy, it will lead to greater success in school and in life, as well as foster successful citizens that will make positive contributions to society.

Limitations of the Current Study

One limitation of this study is the relatively small sample size. A larger sample size could produce more conclusive and powerful results. In addition, the sample was collected from two school districts located in small Midwestern towns, where the diversity of the schools does not accurately reflect that of the entire population. Five percent of the variance in self-efficacy beliefs was attributed to the grade level of the participants in this study. However, there are unknown factors that play a role as well, such as socioeconomic or cultural differences, which the current study did not account for. Another limitation was that there were not any normative or comparison data for the measure used in this study, as it was an adapted version of Bandura's Children's Self-efficacy Scale. These limitations make it difficult to generalize the results of the study to other populations and locations. In addition, this research study was not a longitudinal study. Therefore, the significant differences found between the third and fifth grade groups may not be a reflection of age or developmental differences, but of an inherent difference between the two groups of students used in this sample.

Suggestions for Future Research

Future research in this area should continue to assess self-efficacy beliefs among a variety of ages to create a stronger knowledge base, as there are currently gaps and inconsistencies in this area of research, especially with younger populations. Future researchers should conduct longitudinal research to determine if changes in self-efficacy

happen over time based on gender (i.e., Do females emerge as having higher self-efficacy in reading as compared to males?) Researchers should also examine other variables that contribute to the development of self-efficacy in order to better understand how self-efficacy is formed among students. It may also be beneficial to ask students their perceptions of which gender is better at reading, which can help school professionals learn more about students' internalized beliefs and their impact on academic success. Future research should also address gender socialization and biases that exist in schools and society. By continuing research in this area, it will allow schools to better meet the needs of both male and female students of all grade levels.

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APPENDIX A
PARENT CONSENT FORM

Dear Parent:

Our names are Jenna Alford and Amber Voit, graduate school students from the University of Wisconsin-La Crosse. In order for us to complete our graduate school requirements at UW-La Crosse, we are required to complete an applied thesis project. We have selected Reading and Math Academic Self-Efficacy in 3rd and 5th Grade Students as the main topic for our project.

We are interested in your child's beliefs about his or her own ability to read and perform math problems. Their input provides valuable information that helps identify better ways for teachers and school staff to meet students' needs.

If you agree to allow your child to participate, they will be asked to complete short reading and math activities and a survey regarding their beliefs about their ability to perform such activities. Both the activities and surveys will take approximately 10-15 minutes to complete. Your child's participation in this study is completely voluntary and informed consent is implied upon completion of the activities and surveys. **If you give your permission for your child to participate in the survey please sign and return the bottom portion of this letter by _____.** If your child is not participating in completing the survey they will be asked to sit quietly during this brief time or complete appropriate work.

The results of this study may be published in scientific literature or presented at professional meetings using grouped data only. All information will be kept confidential through the use of numbered codes and not linked to any personally identifiable information. Participating in this study will assist in identifying areas of need for elementary school students.

The distribution of this survey has been approved by the school district, your building administrators, and the University of Wisconsin-La Crosse Institutional Review Board (IRB). Questions regarding study procedures may be directed to the researchers: Jenna Alford (xxx-xxx-xxxx) and Amber Voit (xxx-xxx-xxxx). Questions regarding the protection of human subjects may be addressed to the UW-La Crosse Institutional Review Board for the Protection of Human Subjects (608-785-8124 or irb@uwlax.edu).

Thank you for your cooperation.

I give my permission for my child to participate in the survey.

Child's Name

Child's Teacher

Parent Signature

Date

APPENDIX B

READING SELF-EFFICACY QUESTIONNAIRE

