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UNDERSTANDING THE MULTIDIMENSIONALITY OF READING MOTIVATION: COMPARING READING MOTIVATION OF STUDENTS WITH AND WITHOUT LEARNING/READING DISABILITIES

By

Laurie S. Seder

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and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy in Education

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I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

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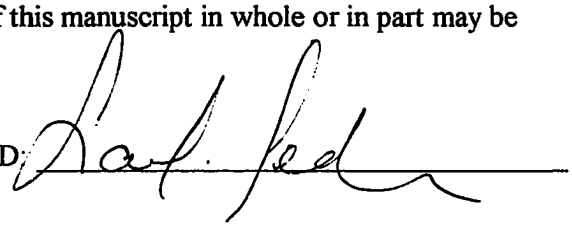
SIGNED: 

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My greatest appreciation is owed to my parents. They had enough foresight to raise both of their daughters with determination and strength. These characteristics have enabled me to purse and accomplish any goal I choose to set for myself.

DEDICATION

This paper is dedicated in loving memory to Gloria Fried. Her positive outlook on life, courage to live, and spirit will never be forgotten.

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ABSTRACT

This study was designed to validate multiple dimensions of reading motivation and to examine how students with learning/reading disabilities (LRD) differed along these dimensions from non-LRD, same-aged peers. A sample of fourth and fifth grade students completed the Motivation for Reading Questionnaire (MRQ; Wigfield & Guthrie, 1997), a questionnaire designed to assess 11 possible dimensions of reading motivation, including self-efficacy, intrinsic and extrinsic motives for reading, goals for reading, and social aspects of reading. Confirmatory factor analysis, analysis of covariance, and discriminant analysis were employed to demonstrate that the proposed dimensions of reading motivation could be identified, measured reliably, and could discriminate between cohorts of students. Several of the scales were positively related to one another. Scale score means on some of the dimensions differed by grade and LRD status, fourth graders reported stronger motivation than fifth graders, non-LRD reported stronger motivation in Self-Efficacy and Challenge, while LRD students reported stronger motivation in Compliance. Scale score means on most of the dimensions were similar by gender and ethnicity regardless of LRD status. Eight of the 11 scales related to children's report of reading activity. Discriminant analysis revealed three dimensions discriminating between students with and without LRD. This study confirms that reading

motivation is multidimensional and should be considered when conducting research and practice.

CHAPTER I: INTRODUCTION

Wigfield and Guthrie (1997) recently introduced a multidimensional construct of reading motivation involving theoretical concepts from the engagement perspective and the achievement motivation fields. Traditionally, motivation researchers defined reading motivation as a reader's interest and attitude towards reading. The new multidimensional construct proposed by Wigfield and Guthrie (1997) broadens this traditional definition by integrating cognitive, motivational, and social aspects of reading with achievement motivation constructs (Baker, Afflerbach, & Reinking, 1996; Guthrie & Alvermann, 1999; Guthrie, Gough, Bennett, & Rice, 1996; Oldfather &Wigfield, 1996; Eccles, Wigfield, & Schiefele, 1998; Schunk & Meece, 1992; Wigfield & Eccles, 1992). The theoretical taxonomy proposed consists of 11 different dimensions of reading motivation, which are organized into three broad reading goals: Competence and Efficacy Beliefs, Goals for Reading, and Social Purposes for Reading (Wigfield, 1997).

To obtain a measure of the 11 dimensions of reading motivation, Wigfield and Guthrie (1995) developed an 82-item questionnaire, with several items assessing each of the theoretically proposed reading motivation dimensions. An initial empirical investigation was conducted using fourth- and fifth-grade students. Based on the results, a revised 52-item questionnaire, The Motivation for Reading Questionnaire (MRQ) was created and used by Baker and Wigfield (1999), not only to validate the revised questionnaire, but also to examine the relationships between the proposed dimensions of reading motivation, reading achievement, and reading activity of fifth- and sixth-grade

students. Baker and Wigfield (1999) were able to confirm the 11 proposed dimensions of reading motivation through the use of confirmatory factor analysis. In addition, they found that most of the students differed on the reading motivation dimensions by gender and ethnicity, with girls and African Americans reporting stronger motivation.

However, neither Wigfield and Guthrie (1995) nor Baker and Wigfield (1999) examined or discussed the reading motivation of students with learning/reading disabilities (LRD). Therefore, this study was conducted to confirm the existence of the 11 dimensions of reading motivation within the framework of the MRQ by using a sample of students identified as LRD; examining differences on the reading motivation dimensions between students with and without LRD with respect to grade level, gender, and ethnicity; and exploring the option of using the MRQ as a tool to describe students with LRD.

Significance

Currently, very little research investigating the multidimensional construct of reading motivation of students with LRD has been presented in the field of learning disabilities. What has been noted characterizes students with LRD are being inactive learners, individuals who are not motivated to engage in the reading process (Brown & Smiley, 1977; Canney & Winograd, 1979; Torgesen, 1977; Winograd & Johnston, 1980). Additional characteristics of students with LRD include poor self-efficacy (Schunk, 1989), poor perceived self-competence (Harter, 1992), poor attributional beliefs (Weiner, 1986), and poor problem-solving abilities (Licht & Kistner, 1986). These negative attributes coupled with poor academic achievement have put students with LRD at risk

for dropping out of school (Fulk & Brigham, 1998). By conducting research to determine what motivates students with LRD to engage in reading tasks, perhaps educators will be better informed and prepared to create programs that have the potential to increase student motivation towards reading, which in turn can affect academic achievement and graduation rates of students with LRD.

Background

Models for motivation are based on several motivational attributes consisting of, but not limited to, self-efficacy (Schunk, 1989), goal orientation (Pintrich & De Groot, 1990), and affective components (Dweck & Leggett, 1988). Using these models, motivational researchers have traditionally examined how students' beliefs, values, and goals relate to task performance, choice of activity, and persistence (Wigfield & Eccles, 1992). The findings suggest that when students are competent and efficacious at a task they are more likely to engage in it (Oldfather & Wigfield, 1996), as well as persist at a the given task for longer periods of time (Pintrich & Schrauben, 1992). These findings are in contrast to those that characteristically describe students with LRD.

Historically, children with LRD have been described as inactive learners, individuals who do not engage in strategic efforts to promote effective learning (Torgesen, 1977). Students with LRD have demonstrated weaknesses in choosing appropriate skills, strategies, and resources to effectively perform an academic task. They also have demonstrated limited ability to use self-regulatory mechanisms and other metacognitive skills (Brown & Smiley, 1977; Canney & Winograd, 1979; Winograd & Johnston, 1980). Moreover, students with LRD have been found to have motivational

difficulties, poor self-efficacy (Schunk, 1989), poor perceptions of competence (Harter, 1992), and poor attributional beliefs (Weiner, 1986). These findings suggest that students who attribute their failure to internal causes, especially innate ability rather than effort, exhibit what Torgesen referred to as "learned helplessness", a negative belief system that is likely to diminish students' expectations, efforts, and problem-solving abilities for academic tasks (Fincham & Cain, 1986; Licht & Kistner, 1986; Torgesen, 1977).

Given the emergence of the multidimensional construct of reading motivation, it is appropriate to conduct a study focusing not only on cognitive components of reading, but also on motivational aspects. Understanding how these constructs work together will enable educators to understand what motivates students with LRD to either participate in or avoid reading tasks. Current studies have examined motivational beliefs of students with LRD using models that have focused primarily on metacognitive processes involved in the reading process rather than on using the more extensive definition of reading motivation proposed by Wigfield and Guthrie (1997; Baker, 1982; Borkowski, Carr, Rellinger, & Pressley, 1990; Paris & Winograd, 1990; Rueda & Mehan, 1986; Wong, 1987). This study advances the knowledge on students' reading motivations by examining the multidimensional construct of reading motivation in a sample of students with and without LRD.

Purpose of Study

The primary purpose of this study was to use the MRQ to explore the multidimensional construct of reading motivation within a sample of students with and

without LRD. Specifically, factor analysis was used to confirm the multidimensional construct of reading motivation proposed by Wigfield and Guthrie (1997). In addition, an examination was made of the MRQ responses made by students with LRD in comparison to responses made by students without LRD.

The analysis of students' responses to the MRQ was conducted in several ways. First, factor analysis was used to confirm the concept of a multidimensional construct of reading by determining if multiple dimensions of reading motivation exist within the framework of the MRQ. Second, item-total correlations and internal consistency reliability coefficients of the theoretically derived dimensions were gathered. Third, a discriminant function was applied to generate a profile containing a set of reading motivation dimensions, which can be used to identify students who are at-risk in reading.

The secondary purpose of this study was to examine the relationship of motivation by group classification (LRD vs. Non-LRD) taking into consideration gender, grade, ethnicity, and reading activity. This exploration was addressed by analyzing students' responses on the MRQ using analysis of variance and analysis of covariance. Specifically, this study was guided by the following research questions:

1. Does the MRQ measure 11 dimensions of reading motivation for a combined sample of fourth and fifth grade students? If so, does the same factor structure occur within the samples of fourth and fifth grade students with LRD?
2. Do students differ on the dimensions of reading motivation when reader characteristics, such as gender, grade level, ethnicity, and amount of reading activity are considered as factors?

3. Do students with LRD differ from students without LRD on the dimensions of reading motivation?
4. Using The Motivation for Reading Questionnaire as an assessment tool for identification purposes, can a profile be created which describes students with and without LRD?

Definitions of Terms

Motivation for Reading Questionnaire (MRQ): A 54-item questionnaire designed to assess 11 different aspects of reading motivation (Wigfield &Guthrie, 1995). Students answer each item on a 1 to 4 scale, with 1 = very different from me, 2 = a little different from me, 3 = a little like me, and 4 = a lot like me.

Learning/Reading Disabilities (LRD): Students who have met the school district's criteria for placement into a program designed for students with LRD. The student must have a measured IQ between 85 and 115 on the Wechsler Intelligent Scale for Children, Third Edition (WISC III; Wechsler, 1991), and must also demonstrate an aptitude-achievement discrepancy in one of the following areas: basic reading skills, reading comprehension, math calculation, math reasoning, or written language. Students who meet the above criteria and had at least one reading goal on their Individualized Educational Program (IEP) were identified as students with LRD.

Non-Learning/ Reading Disabled (NON-LRD): Students who have never been referred to special education or have no known reading problems within the regular education setting. To verify teacher report, the previous year's Stanford Achievement Test Series, Ninth Edition (Stanford 9; Psychological Cooperation, 1994) scaled scores on reading

vocabulary and reading comprehension were used to determine that students were reading within or above 1.5 standard deviations from the mean scaled score obtained for the students' respective grade level placement.

CHAPTER II: LITERATURE REVIEW

The current need to understand the underlying principles guiding student motivation towards academics, specifically reading, stems from four lines of inquiry. First, studies stressing cognitive strategy development for reading have emphasized the conscious, effortful behavior of the reader (Pintrich & Schrauben, 1992). The realization that the cognitive system employed by the reader does not operate automatically that it requires a degree of effort, persistence, and desire has sparked a new interest in the field of reading motivation. To better understand the interaction of these constructs, researchers have begun to ask and explore questions pertaining to individual's choices and implementation of cognitive strategies geared for academic tasks.

Second, various researchers have investigated and provided ample documentation supporting the notion that the amount and breadth of reading are the two largest factors contributing to successful reading achievement (Anderson, Wilson, & Fielding, 1988; Guthrie, Schafer, Want, & Afflerbach, 1995; Stanovich & Cunningham, 1991). These conclusions have all stated that high frequency, amount, and diversity of reading activity increased reading achievement regardless of factors related to schooling, mental ability, gender, and economic level. Recognizing the importance of the amount and breadth of reading, motivational researchers have begun to ask, "What underlying principles related to motivation account for this active engagement in reading?" and "What are the types of classroom conditions that cultivate students to become motivated and active readers?"

Third, current motivational theorists have begun to explore how motivation and cognition interact to enhance an individual's achievement performance. Examples of this

can be found in the expectancy-value theory (Wigfield & Eccles, 1992), the self-determination model (Deci, 1992), and the goals-orientated model (Dweck & Leggett, 1988). However, few of these researchers have explicitly addressed the interactions between motivation and cognition as it specifically pertains to the reading process.

Fourth, social constructivists have viewed literacy as a sociolinguistic interaction (Bloome & Green, 1992). They argue that the interpersonal interactions engaged in by the reader during the literacy development stage encourage continual growth of intrapersonal cognitive and language functions. However, social constructivists have not highlighted nor formally explored the roles of sociolinguistic motivation within the reading process of students with learning/reading disabilities.

This chapter is organized to address these issues and provide an overview of reading motivation as it pertains to students with learning/reading disabilities (LRD). Section I sets the stage by reviewing important concepts from motivation theory and how they relate to the reading process. Section II defines motivation for reading and reviews the Motivations for Reading Questionnaire (Wigfield and Guthrie, 1995) and related research. Section III reviews current motivation research pertaining to students with LRD.

Section I: Motivation Theory

Traditional views of motivation, as they pertain to achievement, were inclined to be concerned with the individual's internal or cognitive-mediational processes influencing behavior. Motivational researchers tended to be interested in what students think about academic goals, academic values, academic tasks, perceived competence

towards tasks, and justifications for academic successes and failures (McCombs, 1996; Rueda & Dembo, 1995). As the field of motivation advanced, sociocultural researchers began to argue for a reconceptualization of the cognitive approach to motivation. Their stance stated that cognition, and therefore motivation, was not situated solely within the individual, but was also related to social and cultural contexts that occurred within the individual's environment (Wertsch, 1991). Thus, the sociocultural view focused not only on understanding the internal components of motivation, but also on how culture influences and shapes what and how students think, feel, and act in academic situations (Rudea & Dembo,1995).

A common thread woven through the historical development of reading motivation was and still is the premise that students are active learners. This element is fundamental in understanding students' motivation for learning, specifically when addressing the reading process. Motivational researchers did concur that an important characteristic of engaged readers is the notion that they are active decision makers whose affects, as well as their aptitude for language, cognitive abilities, and culture, play a role in their ability to successfully navigate the reading process (Guthrie & Wigfield, 2000). Thus, the reader is assumed to have personal wants, desires, and intentions that motivate him or her to become actively engaged in the reading process. This belief entitles the conceptualization of an engaged reader as being both conscious of his or her choices within a specific context and being able to select strategies that allow for successful comprehension of the text (Guthrie et al., 1996b). For example, engaged readers were found to seek conceptual understanding by questioning the author, as well as other

readers, about the information and meaning of the text (Almasi, McKeown, & Beck, 1996).

The social interactions presented by engaged readers demonstrated how active readers were able to successfully use several dimensions from a reading motivation construct to create and construct meaning from literary contexts (Almasi, 1995). Thus, engaged readers "coordinate their strategies and knowledge within a community of literacy in order to fulfill their personal goals, desires, and intentions" (Wigfield & Guthrie, 2000, p. 404). However, not all motivated learners will outwardly demonstrate and engage in the reading activities (Wade, Buxton, & Kelly, 1993). To determine the degree of motivation a student has, the following elements need to be considered and understood prior to developing interventions designed to increase students' motivation towards reading: students' perceptions, expectations, self-efficacy, metacognitive abilities, and environmental issues. The remainder of this section will present current information pertaining to these constructs and how each interacts with reading motivation.

Student Perceptions

As previously indicated, not all students are engaged in the reading process. This does not mean that the student is not motivated to read; he or she simply might not perceive the reading task to be interesting and relevant (Wade, Buxton, & Kelly, 1993). Thus, a variable strongly related to reading motivation, as well as to the students' interest and reading enjoyment, is students' perceptions of the importance and meaningfulness of the text. Researchers have found that interventions and strategies that stimulate students'

interest and enjoyment, rather than attempting to teach cognitive strategies useful for transferring information, increased students' perceptions of the amount of time needed to engage with and persistence in a reading task (Ames, 1992).

Intrinsic and extrinsic motivation factors have also been linked to students' perceptions (Deci & Ryan, 1985). Students who are internally motivated to read have obtained personal gratification and enjoyment from engaging in the reading process. Intrinsically motivated students are characterized as having a high degree of competence (Miller, Behrens, Greene, & Newman, 1993) and high achievement performances on measures of comprehension (Lehtinen, Vauras, Salonen, Olkinuora, & Kinnunen, 1995). Some students have indicated that they experience the "flow experience" (Csikszentmihalyii, 1990), in which they are so absorbed in their task they do not notice the time. Other highly intrinsically motivated students have demonstrated a degree of curiosity to learn outside the initial learning context; this desire is an example of continuing motivation (Maehr, 1976). Other students are motivated to read via external stimuli and rewards. These students are persuaded to engage in the reading task through external incentives including tangible materials or through being visibly recognized for their achievement (Deci, Vallerand, Pelletier, & Ryan, 1991). Moreover, there are children who are internally and externally motivated to read and may demonstrate an array of behaviors characteristic to both factors (Wigfield & Guthrie, 1997).

Expectancy and Self-Efficacy

Students' expectancies and self-efficacy beliefs are constructs that have been historically documented in the literature as being related to and predictive of academic

achievement in reading (Meece, Wigfield, & Eccles, 1990; Nicholls, 1979; Wigfield et al., 1985). Therefore, understanding the relationships between these constructs and their effects on students' motivation to engage in the reading process is essential. As a brief review, expectancy beliefs refer to children's sense of how well they will do on an upcoming task (Stipek, 1984) and, in this context, self-efficacy beliefs will be defined as the readers' judgments of their capabilities to organize and execute courses of action required to attain completion of a task (Bandura, 1986).

Several studies have been conducted confirming the importance of a strong sense of self-concept, one that is more likely to enable students to engage in a perceived difficult task and to successfully select self-regulatory strategies to help them complete the task (Pintrich & De Groot, 1990). Furthermore, students who have positive competency beliefs, are intrinsically motivated, and have clearly defined learning goals, have been found to have greater persistence in challenging tasks, as well as higher levels of engagement (Dweck & Leggett, 1988).

Two broad goal orientations have been the focus within the motivation literature: learning/mastery goals and performance goals. Readers who have adopted the learning goal stance are more readily oriented to improving their own reading skills as well as accepting new challenges (Ames, 1992; Dweck & Leggett, 1988; Nicholls, 1979; Nicholls, Cheung, Laurer, & Pastashnick, 1989). Meece and Miller's (1999) review of task-mastery goals suggested that students with high task-mastery goals had a desire to understand texts, while students with low task-mastery goals had weaker intentions to construct knowledge. In contrast, readers who had adopted the performance or ego

orientation were more concerned with out-performing their peers and attempting to manipulate the environment to maximize favorable evaluations of their reading ability (Thorkildsen & Nicholls, 1998). These students tended to engage in tasks at which they knew they could be successful and consequently, out performed others (Ames, 1992).

Additional studies conducted by Zimmeman, Bandura, & Martinez-Pons (1992) and Schunk & Rice (1993) found that by teaching students to be more efficacious about their academic competence, were more competent and efficacious at reading tasks. In addition, they were more likely to be engaged in the particular reading activity for longer periods of time. Similarly, Chan (1994) examined the developmental pattern of attributional beliefs with respect to ability, effort, luck, and strategy use within the academic area of reading. Her findings suggested that students who believed that they had personal control over their own learning outcomes had higher self-perceptions regarding their cognitive competence and were able to demonstrate higher degrees of motivation towards learning tasks. All of this supports Bandura's (1977) initial argument that individuals with high efficacy expectation, or high self-efficacy, believe that they can accomplish a given task, and that this belief is a major determinant of activity choice, effort level, and persistence.

Ability Beliefs and Metacognition

Engagement in learning activities, especially reading, has been influenced not only by an individual's self-concept, attitudes, and attributional beliefs, but also by an individual's self-regulatory abilities (Borkowski, Carr, Rellinger, & Pressley, 1990; Borkowski & Muthukrishna, 1992). Successfully engaging in self-regulatory strategies

has enabled students to better understand their own personal mental processes, as well as the information being presented through the learning task. However, students may not necessarily be engaging in these self-regulating behaviors if they are not motivated to do so (Paris, Lipson, & Wixson, 1983; Pintrich, 1988, 1989).

Several theoretical frameworks, which include motivation and self-regulatory behaviors, have been conceived of in an attempt to explain students' successful and unproductive academic performances. These models have included metacognitive theory (Flavell, 1979), the general expectancy-value model (Pintrich, 1988, 1989), and a model presented by Zimmerman (1989) that included interactions between self-regulation, metacognition, and motivation. The metacognitive theory posited by Flavell encompassed an array of self-regulatory strategies which, when employed by an individual, would increase the individual's academic performance. These strategies included planning, monitoring, and modifying cognitive actions related to learning (Brown, Bransford, Campione, & Ferrara, 1983).

As the metacognitive theory took hold within the realm of reading, researchers added motivational components they theorized to be essential for a student if academic success was to occur. The general expectancy-value model of motivation (Pintrich, 1988, 1989) included the metacognitive strategies previously mentioned, as well as motivational concepts from the motivation field (expectancy component, a value component, and an affective component). Students who demonstrated higher levels of metacognition, that is self-regulatory and cognitive strategy use, and demonstrated higher

levels of motivation, such as self-efficacy and intrinsic values, were found to have higher levels of academic performance (Pintrich & De Groot, 1990).

Recently, the general expectancy-value model of motivation has been modified to include an additional goals component. Zimmerman (1990) described successful self-regulating students as those who were metacognitively, motivationally, and behaviorally active within their own personal learning experience. These students not only used a variety of self-regulated strategies, and believed that they could perform efficaciously, but they also had set numerous and varied amounts of academic goals for themselves. The triple combination of metacognition, motivation, and goal setting has only recently been addressed in the literature. Wigfield, Eccles, and Rodriquez (1998) proposed that the additional goals component influenced how students self-reacted to their performance, as well as to their performance outcomes. This reaction can only lead to higher levels of motivation, metacognition, and achievement.

Classroom Environments

Sociocultural theorists have been able to demonstrate the interconnectedness between social and cognitive activity by using the classroom as an example of cultural influence on students (Rueda & Dembo, 1995). Social interactions have been found to increase children's achievement in reading (Guthrie et al., 1996a; Slavin, 1996) and peer acceptance (Wentzel, 1996). Additional findings suggest that engaged readers share their reading experiences with family and friends (Morrow, 1996) and have increased levels of reading activity (Guthrie, Schafer, Wang, & Afflerbach, 1995). Thus, students who are able to construct meaning from literary texts share in social activity within the classroom,

and successfully utilize cognitive strategies have demonstrated higher degrees of achievement on reading tests (Wentzel, 1996).

When investigating student motivation for academic tasks, especially participation within the reading process, we should consider school settings, as well as the individuals within these settings (Sivan, 1986). Schools that have adopted a mission of learning as a process, rather than stressing the importance of students' performances on normative tests, have enabled students to become more engaged in the learning process and to successfully utilize an array of self-regulatory processes needed for academic success (Ames, 1992; Dweck, 1991; Meece, 1994). These students have demonstrated deeper processing strategies, such as metacognition (Pintrich & De Groot, 1990); they have taken on more responsibility for their own learning (Meece, 1991); and they have self-initiated future developments of self-motivating strategies (McCombs, 1991). Thus, environmental demands that occur within the classroom and within the school affect students and their levels of motivation towards academic tasks (Dweck, 1986; Dweck & Leggett, 1988; Nicholls, 1984, 1989).

In addition, instructional practices occurring within the classroom environment have been related to students' perceptions, as well as their abilities, expectancies, and beliefs. Practices, which incorporate meaningful and differentiated tasks, have been found to increase student motivation. Specifically, those that involve or encourage students to be active participants have been linked to students being able to effectively build upon their interests, and successfully use cooperative and collaborative learning strategies within the classroom (Ames, 1992; Stipek & Daniels, 1988). Other

instructional practices, which include repetitive tasks, normative evaluations, and isolation of individuals, have been found to negatively interact with student performance. These students have been described as having low self-efficacy and maladaptive motivation towards academic tasks (Anderman & Maehr, 1994).

Summary

Besides establishing the importance of engaging the students with academic tasks, other variables have been positively associated with student motivation for learning. These have included students' perceptions, abilities, expectancies, and efficacy-beliefs. In addition, social contexts related to classrooms have also been found to positively influence student motivation towards learning and engaging in the reading process. Overall, research has provided ample evidence supporting the notion that if students believe they are efficacious at a given academic task and value the activity, they are more likely to use elaborative cognitive strategies as they engage in the task. A more specific look at the reading motivation instruments developed to measure reading motivation, and the interaction of these constructs, is presented in the next section.

Section II: Motivation for Reading

Underlying principles defining motivation are believed to be the constructs that drive students to choose whether they will engage in and persist with the reading process (Eccles, Wigfield, & Schiefele, 1998; Pintrich & Schunk, 1996). Current motivational researchers have begun to incorporate the more traditional motivation constructs with cognitive theory and social theory. This newly constructed definition of motivation for

reading is no longer limited; it now includes the individual's personal goals, values, beliefs, cognitive processes, and academic abilities, as well as the interactions occurring within the culture and environment (Deci & Ryan, 1992; Eccles, Wigfield, & Schiefele, 1998; Schunk & Zimmerman, 1997; Wigfield, 1997). Therefore, motivation for reading is a crucial entity for successfully engaging in the reading process, because it is what activates and sustains students throughout the entire reading process.

As research has demonstrated, students who are motivated to read are engaged in the reading process for a variety of personal reasons (Guthrie, McGough, Bennett, & Rice, 1996). They have social goals in that they share their thoughts and feelings related to their interpretations of the text with their peers and their families. They have strategic goals in that they use a variety of comprehension strategies during the reading process that enable them to obtain their knowledge goals. That is, they are able to successfully use an array of strategies to help them assimilate and accommodate their understanding of new knowledge. Successful readers also have personal goals in that they read a variety of genres, in various settings, and across time. In contrast, readers who are disengaged with the reading process avoid reading. They rarely enjoy reading or exchanging ideas related to the text. They do not have a purpose for reading, they do not have goals, nor are they able to seek understanding of text by using social, strategic, knowledgeable, or personal goals (Cambourne, 1995).

Therefore, it is not at all surprising that several researchers have found a high association between reading engagement and reading achievement. Campbell, Voelkl, and Donahue (1997) found that students who indicated that they read actively and

frequently achieved higher scores on academic achievement tests than their less engaged peers. Thirteen-year-old students were found to have higher reading engagement scores on an achievement test than did their 17-year-old counterparts who indicated they were less engaged in the reading process. Campbell, Voelkl, and Donahue (1997) concluded that students who indicated they were engaged readers were able to provide themselves with self-generating learning opportunities. These opportunities appeared to be equivalent to several years of education. This is an example of the Matthew effect (Stanovich, 1986): high achievers improve more rapidly that low achievers over time while in school. The underlying belief is that good readers read more and by doing so, increase their competence and their knowledge beyond that of students who do not regularly engage in reading. Conversely, students who do not read do not provide themselves with the opportunities to increase their knowledge or reading abilities.

Motivation for reading, therefore, is viewed as one link between engagement in reading and reading achievement. Some researchers believe that by increasing the student's competence in reading and by increasing the belief in one's reading abilities, the motivation to read will also increase. By increasing this motivation, one can increase reading activity and in turn, increase knowledge and academic success (Guthrie, Wigfield, Metsala, & Cox, 1999).

Multidimensional Model of Reading Motivation

During the past several years, current reading motivational researchers have attempted to create a multiple dimensional reading motivation construct and have developed instruments aimed at measuring these dimensions. Some instruments focused

on one or two dimensions of reading motivation, while others attempted to measure more. A brief overview of these instruments, the theory underlying them, and the multidimensional motivations for reading taxonomy presented by Wigfield and Guthrie (1995) are discussed.

Several instruments for assessing dimensions related to reading motivation constructs have been developed by researchers during the past decade (Gambrell, Palmer, Codling, & Mazzoni, 1996; McKenna, Kear, & Ellsworth, 1995; Wigfield & Guthrie, 1995). Each has attempted to measure one or more constructs related to reading motivation. The Motivation to Read Profile (MRP), consisting of 20 items, was developed by Gambrell, Palmer, Codling, & Mazzoni (1996) to assess reading motivation quantitatively and qualitatively by evaluating students' self-concept as readers and the value they place on the reading process. To determine self-concept, students were asked to provide a self-report using a Likert-type scale to the first part of the reading survey. To measure the value they place on the reading process, students were individually interviewed during a structured conversational interview. The selection of questions on the MRP was conducted by reviewing the research and theories related to motivation. Results from the MRP were intended to help teachers plan instructional activities that support students during their reading development.

Chapman and Tunmer (1995) developed a self-concept questionnaire assessing three dimensions of reading concept: perceptions of competence at reading, perceptions of reading difficulty, and attitudes or feelings toward reading. This instrument consisted of 50 items, of which 26 were positive statements (e.g., I am a good reader) and 24 of the

items were negatively stated (e.g., I make lots of mistakes while reading). Students were asked to respond to each item using a five point Likert scale: 1 = no, never; 2 = no, not usually; 3 = undecided; 4 = yes, usually; and 5 = yes, always. Three subscale scores can be obtained indicating the students' degree of attitude and perceptions towards reading. Even though Chapman and Tunmer (1995) did not use the term "motivation" in conceptualizing their questionnaire, the three dimensions they measured are related to three dimensions of reading motivation as defined by Wigfield and Guthrie (1997): self-efficacy, challenge, and curiosity.

MeKenna, Kerr, and Ellsworth (1995) attempted to measure the reading attitudes of elementary students. Students were asked to respond to 20 items assessing how much they liked to read in school and out of school. Baker and Wigfield (1999) determined that the concepts measured on this scale were related conceptually to Gambrell et al.'s (1996) value of reading subscale and to the curiosity and involvement dimensions defined by Wigfield and Guthrie (1997).

The Motivation for Reading Questionnaire (MRQ), a 52-item self-report survey developed by Wigfield and Guthrie (1997), attempted to not only bridge the gap between motivation and reading, but also to assess a wider variety of dimensions associated with reading motivation than the other instruments reported above attempted to measure. Based on concepts, theories, interviews, and focus groups, questions were generated relating to reading goals, intrinsic motivation, extrinsic motivation, self-efficacy, and social motivation. From these questions, it was proposed that 11 different possible dimensions or subscales measuring different constructs related to reading motivation

could be generated with approximately 2 to 7 items per grouped together to form a subscale. These subscales were then classified, based on theoretical rationale, into three models of reading: Competency and Efficacy Beliefs, Goals for Reading, and Social Purposes for Reading (See Table 2.1).

Table 2.1: Proposed Models of Reading Motivation

Model	Dimensions
Competence and Efficacy Beliefs	Self-Efficacy, Challenge, Work Avoidance
Goals for Reading	Curiosity, Involvement, Importance, Recognition, Grades, Competition
Social Purposes for Reading	Social, Compliance

The first model, Competency and Efficacy Beliefs, includes Bandura's concept of self-efficacy and an additional concept reflecting the reader's perceived degree of difficulty related to reading tasks. In the MRQ model, Self-Efficacy was redefined to reflect an individual's self-efficacy as it pertains to the reading process; thus, the definition of Self-Efficacy reflects the degree to which a reader perceives him- or herself as being successful at a given reading task. This is based on the notion that students with high self-efficacy will attempt difficult reading tasks by using elaborate cognitive strategies that enable them to be successful (Schunk & Zimmerman, 1997). Inversely related to self-efficacy is the notion of work-avoidance. Students who lack a sense of self-efficacy have been found to avoid challenging reading activities (Bandura, 1997). In addition, students' willingness to participate in challenging reading tasks was also included in this model, Challenge. This was related to the fact that if students believe

they can successful complete the challenging task, they will be more likely to engage in it (Bandura, 1997; Schunk & Zimmerman, 1997).

The second reading model, Goals for Reading, includes the purposes students have for engaging in the reading process. Borrowing concepts from two broad reading goal orientations (learning goals and performance goals) and from the motivation field, several reading dimensions, which characterize different aspects of intrinsic and extrinsic motivation, were generated to define this model (Ames, 1992; Dweck & Leggett, 1988; Nicholls, 1979; Nicholls, Cheung, Laurer, & Pastashnick, 1989). The subscales Curiosity, Involvement, and Importance were created to characterize students who believed in the value of reading, were more apt at accepting new challenges, and engaged in reading activities to improve their own knowledge. Curiosity describes the student's desire to read more about a particular topic of interest. Involvement characterizes students' enjoyment experienced from engaging with different forms of literacy or informational texts. Importance reflects Wigfield and Eccles' (1992) work on subjective task values.

The three dimensions related to extrinsic motivation on the Goals for Reading model are Recognition, Grades, and Competition. Recognition encompasses students' pleasure in receiving an external stimulus either in the form of a tangible object or as verbal recognition for success in reading (Deci, Vallerand, Pelletier, & Ryan, 1991). Grades reflects the students' pleasure or desire to receive a favorable evaluation from the teacher and Competition characterizes the students' desires to outperform each other in the academic area of reading. These three extrinsic dimensions of reading motivation

were created to reflect the notion that children do much of their reading within the school environment, where their reading is perceived as a performance that is evaluated and compared to others.

The third reading model addresses the students' interactions with the environment, Social Purposes for Reading. The two dimensions reflected in this model are based on the premise that reading is inherently a social activity and that social aspects from the classroom have important impacts on students' academic performance (Baker et al., 1996; Guthrie, McGough, et al., 1996; Marshall, 1992; Webb & Palincsar, 1996). Social Aspects reflects the process of constructing and sharing meanings obtained from reflecting upon the text with friends and family. Compliance provides an indication of how much of the students' engagement in the reading process is conducted to meet the expectations of others.

Validity Research on the MRQ

Wigfield and Guthrie (1995) developed the MRQ to define and assess different dimensions of reading motivation. Initially the MRQ consisted of 82 items, with 7 or 8 items measuring each of the proposed dimensions. The initial 82-item questionnaire was administered twice to 105 fourth and fifth grade students, once in the fall and once again in the spring (Wigfield & Guthrie, 1997). Internal consistency reliabilities, item-total correlations, factor analyses, and correlations of the motivational dimensions were conducted to determine if the proposed aspects dimensions of reading motivation could be identified empirically. On the basis of the fall and spring factor analyses, 22 items were deleted from the original 82 because they had either demonstrated poor item-total

correlations or generated a factor loading of .40 or lower. In addition, six more items were found to be badly skewed, and consequently were dropped from the 82-item questionnaire.

The remaining 54 items were used in a study conducted by Baker and Wigfield (1999) to confirm and validate the theorized 11 dimensions of reading motivation. Because of the small sample size (n=371; Fornell, 1983), the dimensions on the questionnaire were divided into three proposed models (Competence and Efficacy Beliefs, Goals for Reading, and the Social Purposes for Reading). Table 2.2 presents these models and which items were theorized to load on each of the dimensions.

Table 2.2 Models and Dimensions Included in the Theoretical Taxonomy of Reading Motivation.

Model	Dimension	MRQ Item Numbers
1. Competence and Efficacy	1. Self-efficacy	3, 9, 15, 50
	2. Challenge	2, 7, 26, 44, 48
	3. Work Avoidance	23, 27, 28, 52
2. Goals for Reading	4. Curiosity	5, 8, 13, 16, 35, 45
	5. Involvement	10, 24, 30, 33, 41, 46
	6. Importance	53, 54
	7. Recognition	14, 17, 29, 31, 36
	8. Grades	19, 37, 39, 40
	9. Competition	12, 18, 22, 43, 49, 51
3. Social Purposes of Reading	10. Social Aspects	1, 11, 20, 21, 34, 38, 42
	11. Compliance	4, 6, 25, 32, 47

Summary

Traditionally, research investigating students' reading motivation has focused on cognitive aspects involved in the reading process. Current research has attempted to add

new clarity into students' motivation for reading by redefining the reading motivation concept to integrate cognition with motivation, achievement, and social aspects. The Motivation for Reading Questionnaire (MRQ), an instrument theoretically grounded in motivational concepts from the engagement perspective and achievement motivation theory, attempts to measure 11 possible dimensions of reading motivation. Compared to other instruments that have been developed to measure students' reading motivation, the MRQ assesses a wider variety of dimensions and has been validated by Baker and Wigfield (1999), making it a promising instrument for use in assessing students' reading motivation.

Section III: Motivation and the Student with Learning/Reading Disabilities

Students with learning/reading disabilities (LRD) have been described as inactive learners (Torgesen, 1977); that is, they have a limited degree of motivation to improve upon their academic skills, especially in the area of reading (Adelman & Taylor, 1983). Students with LRD have also been found to demonstrate a lower probability of engaging in academic tasks and were less likely to spontaneously engage in metacognitive strategies (Baker, 1982; Wong, 1979). Furthermore, students with LRD have (a) displayed lower self-concepts (Chapman, 1988), (b) a perceived external locus of control (Bryan, 1986), and have generated very few achievement expectations (Rogers & Saklofske, 1985) when compared to non-LRD peers. Since academic performance is shaped by acquired knowledge, motivation, self-concept, and effort (Meltzer, Roditi, Houser, & Pearlman, 1998), it is imperative to understand the self-perceptions of students with LRD in order for creative and innovated teaching approaches to be developed,

which will strengthen and/or awaken what appear to be deficits in academic strategies (Harter, Whitsell, & Junkin, 1998). The following section reviews some of the current literature that describes students with LRD and addresses their lack of reading motivation characteristics. A proposal for new and innovated research exploring the motivation for reading of students with LRD will be introduced.

Limited Engagement in Academics

Students with LRD have demonstrated difficulties engaging in academic activities. This may be related to limited academic motivation stemming from the students' perceived lack of competence and perceived external locus of control in the learning situation (Bandura, 1982; Wiener, 1979). Researchers have theorized that students' performances are influenced by a combination of the individual's degree of self-efficacy and the individual's academic abilities (Schunk, 1989). Students with LRD have been noted to have poor self-efficacy and an internal feeling of not being able to successfully complete a task. Students with LRD have also been found to have lower self-perceptions about domain–specific academic tasks compared to same-aged, non-LRD peers (Harter, Whitsell, & Junkin, 1998).

In addition, researchers have associated one's negative or low self-belief in one's academic abilities with negative emotional reactions; thus, many students with LRD who have demonstrated poor effort and persistence when confronted with challenging tasks have been found to engage in disruptive classroom behavior (Bandura, 1982). In addition, some students with LRD have demonstrated "learned helplessness," a belief that they have limited control over the learning situation or outcome (Weiner, 1979). The

combination of poor self-efficacy and the perceived external locus of control over one's learning experiences has been related to a higher percentage of students with LRD to discontinue their education before graduation (Fulk & Brigham, 1998).

Limited Use of Metacognition

For some students with LRD, their limited engagement and inactivity towards academic tasks has been attributed to their difficulty with successfully using metacognitive skills. As previously stated, metacognition refers to one's inner language that supports individuals thinking about their own thinking. This interaction enables a person to use his or her own self-knowledge about cognition and their perceptions about their own ability to influence their choices in behaviors. Students with LRD have demonstrated an inefficient use of self-knowledge and self-awareness when working on academic tasks (Vaidya, 1999). These two components relate to one's ability to efficiently use self-regulation strategies, for example adapting, planning, and problem solving. Self-regulation skills have also been linked to successful learning outcomes (Borkowski, Carr, Rellinger, & Pressley, 1990). Additional examples of self-regulated behaviors include the ability to (a) engage in tasks, (b) set goals for upgrading knowledge, (c) deliberate about appropriate strategy use, (d) monitor accumulation effects of the engagement process, and (e) adjust goals and/or strategy use to be academically successful (Butler & Winne, 1995). Research has shown that students with LRD limit their engagement in tasks (Sinclair, Christenson, Evelo, & Hurley, 1998), set poorly defined academic goals (Johnson & Graham, 1997), and are unable to choose appropriate strategies (Allinder, 2001).

Unlike proficient readers who demonstrate an execution of more than one metacognitive behavior, students with LRD have demonstrated weaknesses in reading because they have not acquired or become proficient in successfully executing strategic reading behaviors (see Table 2.3; Swanson & De La Paz, 1994). Students with LRD attend poorly to the meaning of passages and have difficulty relating what is being read to prior knowledge (Bos & Vaughn, 1994). In addition, other behaviors associated with poor self-regulated use have been attributed to the students' inappropriate judgment of a task, the students' misperception of cues given by the teacher, an overwhelmed feeling from too many cognitive demands, and the students' own lack of motivation (Butler & Winne, 1995).

Table 2.3: Reading Activities Not Successfully Performed by Students with LRD

Reading Activity	Reference
Understanding the purposes for reading	Baker, 1982
Choosing appropriate reading strategies	Brown & Palincsar, 1982
Identifying important information in a passage	Baker & Brown, 1984
Recognizing and evaluating logical structure inherent in passages	Cullen, 1985
Attending to syntactic and semantic constraints	Spedding, 1990
Self-regulating how well material is understood	Wong & Jones, 1982

Students with LRD can learn and successfully apply metacognitive strategies to their academic tasks. Over the years, researchers and educators have provided training to students with LRD on several of these skills. However, it was noted that students with LRD, even when they had demonstrated their competence in using a specific reading strategy, would not spontaneously employ the strategy (Chan, Cole, & Morris, 1989). Students with LRD had to be cued to a specific strategy before they would use it (Bos &

Filip, 1984). The phenomenon of not spontaneously activating specific metacognitive strategies related to reading added additional evidence within the field that students with LRD not only struggle with self-monitoring their own actions by using self-regulatory strategies (Wong & Jones, 1982), but they also demonstrated significantly low levels of internal motivation (Smith, 1994).

Motivation and Affective Factor

Intrinsic and extrinsic motivation play important roles in motivating students with LRD to attempt, persist, and finish academic related tasks (Borkowski, 1992). In classroom situations, students with LRD have displayed fewer intrinsically motivated characteristics than their non-LRD peers (Mastropieri & Scruggs, 1994). In an attempt to increase motivation, educators have designed programs to teach students to be intrinsically motivated. These programs have used several forms of external stimuli to entice students to participate or to complete an activity (Newby, 1991). In a recent study conducted by Newby (1991), new teachers were found to employ extrinsic motivators more frequently than intrinsic motivators. Unfortunately, the extrinsic motivators were found to adversely affect students' on-task behaviors. These external motivators interfered with the initial intent of teaching intrinsic motivation to the students. Instead of the students receiving a feeling of accomplishment and success (Deci, Vallerand, Pelletier, & Ryan, 1991), the students participated solely for the attainment of the external reward (Benninga, et al., 1991). Furthermore, students with LRD have indicated that engaging in an activity solely for the purpose of attaining an external rewards can be stressful (Deci & Ryan, 1985). In attempting to control the student by manipulating the

learning environment, educators have inadvertently limited the self-determination of these students and reinforced the notion that they are not in control of a learning situation; consequently, we have lowered their self-efficacy and decreased their motivation for engagement in future academic situations (Adelman & Taylor, 1990; Deci et al., 1991).

Call for New and Innovative Research

Based on the lack of empirical research investigating the reading motivation of students with LRD, this study offers additional validation to the notion that motivation for reading is multidimensional and that students with LRD may differ on these dimensions when compared to their non-LRD peers. Regardless of whether students differ on these dimensions, the use of the MRQ may enable educators to better understand reading motivation of students with LRD and may also allow educators to identify subgroups of students along the reading motivation dimensions. This ability might encourage educators to create innovative lessons that do not undermine the students' ability, skill level, and interest (Brophy, 1983; Dev, 1997; Schunk, 1990).

CHAPTER III: METHOD

This study offers an additional validation of the Motivation for Reading Questionnaire (MRQ; Wigfield & Baker, 1997) by empirically validating the multidimensional construct of reading motivation within a sample of fourth and fifth grade students with and without learning/reading disabilities (LRD). Reader characteristics, such as gender, grade level, ethnicity, and reading activity were also explored. Finally, a linear discriminant analysis was conducted to determine if the MRQ discriminates between students with and without LRD. This study was guided by the following research questions:

1. Does the MRQ measure 11 dimensions of reading motivation for a combined sample of fourth and fifth grade students? If so, does the same factor structure occur within the samples of fourth and fifth grade students with LRD?
2. Do students differ on the dimensions of reading motivation when reader characteristics, such as gender, grade level, ethnicity, and amount of reading activity are considered as factors?
3. Do students with LRD differ from students without LRD on the dimensions of reading motivation?
4. Using The Motivation for Reading Questionnaire as an assessment tool for identification purposes, can a profile be created which describes students with and without LRD?

Participants

The participants in this study were fourth and fifth grade students recruited from six schools within a southwestern metropolitan school district. The percent of enrolled students on free/reduced lunch averaged 21.2% with a range from 2% to 62%. In order to ask the students if they were willing to participate, special education and general education teachers at four schools were sent an invitation explaining the study (See Appendix A). To increase the sample of students with LRD, two additional schools with similar socio-economic status (SES) were targeted and only the special education teachers were invited to participate. Table 3.1 presents the number and percentage of teachers at each school site who volunteered for the study.

Table 3.1: Total Number of Teachers Invited to Participated and Percentage Participating.

School	Special Education		4th Grade Teachers		5th Grade Teachers	
	N	%	N	%	N	%
A.	2	50	5	60	5	100
B	2	100	4	75	4	75
C	1	100	4	75	3	100
D	2	100	3	0	3	33
E	3	100	N/A	N/A	N/A	N/A
F	2	100	N/A	N/A	N/A	N/A

Note. N/A = not applicable.

Table 3.2 reports on the number of students eligible to participate and the percentage participating at each school. Across schools and grades, an average of 29% of the general education students and 41% of special education students participated, resulting in a pool of 340 students who volunteered to participate and obtained parent consent (See Appendix B). Nine students were absent on the days the researcher returned

to collect data, thus the entire sample size is comprised of 331 students. Table 3.3 presents the number of students by gender and school who participated from each school site. Fifty percent were boys (n = 167) and 50% were girls (n = 164); 42% were in 4th grade (n = 138) and 58.3% were in 5th grade (n = 193).

Approximately 19.3% of the students were students with LRD (n=64). These students, when initially placed into special education, had demonstrated, according to the district's criteria, an aptitude-achievement discrepancy in either basic reading or reading comprehension. In addition, these students were: (a) currently being served by a special education teacher, (b) had at least one reading goal on his/her current IEP, and (c) were considered proficient in English, as defined by district guidelines for English proficiency. The special education teachers provided this information.

Table 3.2: Total Number of Students Invited to Participate and the Percentage Participating.

	Fourth Grade		Fifth Grade		Fourth Grade Special Ed.		Fifth Grade Special Ed.	
	N	%	N	%	N	%	N	%
A	145	38	144	45	14	29	9	22
B	99	30	88	31	9	22	14	50
C	83	30	96	49	5	0	7	57
D	74	0	66	8	19	47	16	56
E	N/A	0	136	10	15	27	21	29
F	N/A	0	N/A	0	13	69	16	50

Note. N/A = Not applicable.

Table 3.3: Demographics of Participating Students

	4th Grade				5th Grade				
	Non- LRD		LRD		Non-LRD		LRD		
School	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Total
	n	n	n	n	n	n	n	n	n
A.	25	30	3	1	26	39	2	0	126
B.	15	15	1	1	12	15	5	2	66
C	14	11	0	0	22	25	3	1	76
D	0	0	6	3	2	3	7	2	23
E	0	0	3	1	4	9	4	2	23
F.	0	0	7	2	0	0	6	2	17

The other 267 students were non-learning/reading disabled (non-LRD) and had not been referred during their schooling for special education services as indicated by their teacher. In addition, these students were English proficient and reading at or above grade level based on achievement information obtained from the Stanford 9 and from teacher report. Students without LRD were determined to be reading at or above grade level if their scaled scores on the Stanford 9 vocabulary or comprehension subtests were higher than 540. The scaled scores were obtained from the students' Spring 2000 Stanford 9 summary sheets. None of the students were dismissed from this study due to low Stanford 9 scaled scores. For students who did not take the Stanford 9 (n = 90), teacher report regarding reading ability was used to determine if the student was reading within 1 year or higher of his or her particular grade level.

The ethnicity of the sample consisted of 3.9% African Americans, 18.4% Hispanics, 0.6% Native Americans, and 3.6% Asians. The remainder of the sample (71.3%) consisted of White, non-Hispanic students. Five students (1.5%) did not disclose their ethnicity. The ethnicity percentages were similar for general and special education

students. Given the small representations for each minority ethnic group, all non-White students who participated will represent a non-White sample (n = 95). Each student provided information about his or her ethnicity during the time he or she completed the questionnaire.

Instruments

Motivation for Reading Questionnaire.

The 54-item revised version of the Motivation for Reading Questionnaire (MRQ) developed by Wigfield and Guthrie (1995) was used in this study. The questionnaire was developed to theoretically measure 11 different dimensions of reading motivation: Self-Efficacy, Challenge, Work Avoidance, Curiosity, Involvement, Importance, Recognition, Grades, Competition, Social Aspects, and Compliance. Three models were generated to reflect a theoretical organization of the items (see Table 3.4). Students were asked to respond to each item by using a 4 point Likert scale 1 = very different from me, 2 = a little different from me, 3 = a little like me, and 4 = a lot like me. Each of the items and its theoretical dimension is presented in Appendix C.

Table 3.4: Models and Dimensions Included in the Theoretical Taxonomy of Reading Motivation.

Model	Dimension	MRQ Item Numbers
1. Competence and Efficacy Beliefs	1. Self-efficacy	3, 9, 15, 50
	2. Challenge	2, 7, 26, 44, 48
	3. Work Avoidance	23, 27, 28, 52
2. Goals for Reading	4. Curiosity	5, 8, 13, 16, 35, 45
	5. Involvement	10, 24, 30, 33, 41, 46
	6. Importance	53, 54
	7. Recognition	14, 17, 29, 31, 36
	8. Grades	19, 37, 39, 40
	9. Competition	12, 18, 22, 43, 49, 51
3. Social Purposes of Reading	10. Social Aspects	1, 11, 20, 21, 34, 38, 42
	11. Compliance	4, 6, 25, 32, 47

Reading Activity

To assess students' self-reported reading activity, two questions were adapted from the Reading Activity Inventory (RAI) developed by Guthrie, McCough, & Wigfield (1994). The purpose of the RAI was to measure the breadth and frequency of students' reading. Questions on the RAI asked students to indicate which type of reading material they read in or out of school during the previous week as well as to indicate how often they read the materials. The questions adopted for this study were: Did you read for fun in the last week? If so, what was the title or the name of the author? And, How often do you read for fun: almost never, about once a month, about once a week, or almost every day? These items were included on the MRQ as Items 55 and 56 (Appendix C). Item 55, which asked if the student read for fun in the last week, was scored 0 for responding negatively and 1 point for providing a positive response. Item 56, which asked the

student how often they read for fun, was graded on a 4-point system 0 = never, 1 = once a month, 2 = once a week and 3 = for every day. These items were summed together in order to obtain a composite Reading Activity score.

Reading Ability

Scaled scores from the reading comprehension and reading vocabulary subtests of the Stanford Achievement Test Services, Ninth Edition (Stanford 9; Harcourt Inc., 1999), were used as indicators of students reading achievement. The Stanford 9 contains a set of subtests designed to measure students' academic achievement in reading, language, and math. The subtests are group administered, paper-and-pencil scales, typically given by the schools during the Spring semester.

The Reading Comprehension subtest represents a literature-based curriculum taught in many school districts. Several selections included on this subtest are original short stories and articles written authors of children's books solely for the use on Stanford 9 subscales. Three types of reading selections are offered: recreational, textual, and functional. Students are required to respond to questions designed to measure their understanding of directly stated details, their ability to make interpretations, and their ability to conduct critical analyses.

The Reading Vocabulary subtest was designed to measure the student's ability in understanding and using vocabulary. Students are asked to demonstrate their knowledge of definitions, word usage, antonyms, and analogies.

Procedures

In the Fall of 2000, the researcher visited the classrooms of participating teachers twice. During the initial visit, the researcher explained the research project and consent forms to the students. The students were given one week to take the forms home and discuss their participation in the study with their parents. When the researcher returned, she collected all signed consent forms and administered the MRQ to these students.

Students with LRD were given the MRQ during their resource instructional time in the resource room. Students without LRD responded to the instrument during silent reading in their regular homeroom. In both situations, the researcher administered the MRQ to a group of students. All the students were told that they were going to answer 56 items on a questionnaire and that these items asked them about their feelings towards reading. There were no right or wrong answers. Prior to beginning the questionnaire, students were given three practice items so that they had a chance to use and to understand how the Likert scale worked. The researcher then read all the items, one at a time, making sure the students were given ample time to respond. When necessary, items were reread. No additional explanation of what was meant by an item was given. However, when students asked what was meant by fiction, science fiction, or non-fiction, the researcher selected books in the students' classroom to use as examples. Each group administration of the MRQ took approximately 20 minutes.

Data Analysis

The data analysis for this study was organized to correspond to the research questions stated previously. SPSS Base 10.0 Statistical Applications package (SPSS©, 1999) was used to run all of the analyses conducted in this study.

Factor Analysis of the Motivation for Reading Questionnaire

The factor analysis (CFA) models used in this study were based on Baker and Wigfield's (1999) procedures for validating the MRQ. The three models used in their analysis were previously presented in Table 3.4. Exploratory models of factor analysis were employed to assess the dimensionality of the MRQ within a sample of students with LRD. Prior to conducting the factor analyses, three descriptive analyses were conducted on the items. Items were tested for skewness and kurtosis in order to determine the type of estimation to be used in the factor analysis. Univariate distribution of the data was found, thus confirming the use of the maximum likelihood estimation procedure. Maximum likelihood estimations provide reliable parameter estimates when univariate normality is present (Bollen, 1989). This was also the method used by Baker and Wigfield (1999).

The third descriptive analysis conducted was exploring the internal consistency of each subscale by obtaining item-total correlations for each of the 11 dimensions of reading motivation and Cronbach alphas. The Cronbach alpha measures how well a set of items or variables measures a single unidimensional construct by comparing the in-between variance to the within variance.

To extend the validation of the MRQ and to compare the findings from this research to Baker and Wigfield's (1999) research, three separate sets of CFAs were conducted. For each model, the proposed theoretically derived factor model was tested and a Goodness-of-fit chi-square statistic was obtained. Baker and Wigfield (1999) used the chi-square and the chi-square divided by degrees of freedom ratio to determine if the obtained factor models were significant. They adopted criteria from Marsh, H., Balla, and McDonald (1988) stating that an obtained chi-square divided by degrees of freedom ratio less than 2.0 indicated a good-fit. To determine if the factors obtained in this study were similar in structure to those obtained by Baker and Wigfield (1999), two additional congruence formulas (Herrero, Cuesta, & Fernandez, 1997) were used to obtain congruence estimates. These include the Coefficient of Congruence (CC; Wrigley & Neuhaus, 1955) and the Root Mean Square (RMS; Harmon, 1960). These formulas are presented in Appendix E. The CC interpretation is similar to a Pearson correlation: the closer the estimate is to 1.0 the more similar are the two factors being compared. The RMS provides an indication of how much disparity is between the two factors; thus a value closer to 0.0 indicates similar factor structures.

The first CFA analysis examined the structure of the Competence and Efficacy Beliefs Model. This theorized three-factor model included items from the following scales: Self-efficacy, Challenge, and Work Avoidance. The second CFA analysis examined the proposed six-factor structure of the Goals for Reading Model, which contained items from the following scales: Curiosity, Involvement, Importance, Recognition, Grades, and Competition. The third CFA analysis examined the proposed

two-factor model of the Social Purposes of Reading Model, which contained items from the Social and Compliance scales.

Examination of the Dimensions of Reading Motivation

To determine if differences on the dimensions were present due to gender, grade level, ethnicity, reading activity, and learning/reading disability status, a series of analysis of variances were conducted for each dimension of reading motivation. Covariates were used to represent Gender, Grade Level, and Ethnicity. Due to the small sample representation for each of the minority groups, all students in non-White ethnic categories, were reclassified into a non-White cohort (n = 95). To obtain scale scores for each dimension, scores on each item for the projected scale were summed and then divided by the corresponding number of items for that scale. This mean value became the student's scale score.

Examination of Reading Activity with Reading Dimensions

Pearson correlations were obtained to explore the relationship between students' indicated reading activity and their obtained scores on the dimensions of reading motivation.

Profile Examination using Discriminant Analysis Function

A discriminant analysis was conducted to provide a preliminary validation of the MRQ as an instrument to classify students with and without LRD. Discriminant analysis is a statistical technique enabling the researcher to study differences between two or more groups with respect to several variables simultaneously (Klecka, 1980). In other words,

one is interested in discriminating between groups on the basis of a set of characteristics. Discriminant analysis provides statistical information pertaining to how well these characteristics discriminate and identifies which characteristics are the most powerful.

In this study, the researcher was interested in discriminating between students with and without LRD by using the reading motivations identified on the MRQ. Thus, all 11 dimensions of reading motivation were used as independent variables within the discriminant analysis.

CHAPTER IV: RESULTS

The results for this study are reported in four sections, which correspond to the research questions presented in Chapter Three. The first section contains results from several confirmatory factor analyses (CFA) which were conducted on the Motivation for Reading Questionnaire (MRQ). The second section contains statistical results from exploring how reader characteristics (gender, grade, ethnicity, and reading activity) are related to the students' scores on the different dimensions of reading motivation. The third section contains the results of the statistical exploration of the differences between students with LRD and students without LRD on the different dimensions of reading motivation. The final section presents discriminant analysis using the dimensions of reading motivation to classify students with and without LRD.

Section I: Factor Analysis of the MRQ

Preliminary exploration of how well each item related to the dimension to which it was proposed to belong was conducted by obtaining item-to-total scale correlations (see Appendix D). These showed moderately positive to highly positive correlations. The lowest of these item-total correlations was Item 1 with the total score from Social Aspects ($r = .41$, $p \leq .001$). The highest item to scale total correlation was Item 54 with the total score from the Importance dimension ($r = .89$, $p \leq .001$). All the items were retained.

Factor Analysis (n = 331).

The chi-square goodness-of-fit (GFI) indices for the cfactor analysis are presented in Table 4.1. Five of the chi-squares divided by degrees of freedom ratio were under the 2.0 criteria used by Baker and Wigfield (1999; Marsh, H., Balla, & McDonald, 1988). Four of the six models generated chi-squares that were significant, indicating that these observed models were not similar to the hypothesized models; a discussion of these differences will follow.

Table 4.1: Goodness-of-Fit Indices for the Factor Models for all Students (n= 331)

	df	X^2	X^2/df
Competence and Efficacy Beliefs Model			
Null Model	42	70.79**	1.69
Three Factor Model	42	61.91*	1.47
Goals Model			
Null Model	163	191.935	1.18
Six Factor Model	204	293.271**	1.44
Social-Compliance Model			
Null Model	24	34.44	1.44
Two Factor Model	43	102.93**	2.39

Note. * $p \leq .05$. **$p \leq .01$.

Estimates of congruence were used to determine if the factor loadings obtained in this study were similar to those obtained in the Baker and Wigfield (1999) study. The estimates of congruence are presented in Table 4.2. Congruence estimates for the Compliance model were not generated due to the fact that Baker and Wigfield dropped items 4 and 6 from the factor analysis due to poor item-total correlations between these items and the Compliance subscale total. The dimension appearing to be the most

discrepant is the Self-Efficacy dimension (CC = .518; RMS = .409). The other 9 dimensions appear to be similar in factor structure when compared to the factor structures obtained in Wigfield and Baker's (1999) study.

Table 4.2: Congruence Coefficients for the 11 Dimensions of Reading Motivation (n = 331)

Dimension	Coefficient of Congruence	Root Mean Square
Self-Efficacy	.518	.409
Challenge	.990	.093
Work Avoidance	.984	.142
Curiosity	.915	.212
Involvement	.973	.141
Importance	.982	.177
Recognition	.956	.175
Grades	.825	.292
Competition	.999	.104
Social	.897	.275
Compliance	N/A	N/A

Competency and Efficacy Model. The rotated standardized factor loadings for the Competency and Efficacy Beliefs model are presented in Table 4.3. Several of the items performed differently in this study than in Baker and Wigfield's (1999) study. These items are marked with an asterisk (*) in Table 4.3. Any factor loading lower than .40 was not interpreted, this procedure was adopted from Wigfield and Guthrie's (1995) study.

The three-factor model, which included the dimensions of Self-Efficacy, Challenge, and Work Avoidance, explained 32.24% of the variance. The null model only explained an additional 2%, or a total of 34.24%. Thus, the proposed three-factor model will be discussed. Item 9, which specifically asked students if they think they are a good reader, accounted for 92% of the variance of factor 1, Self-Efficacy. Three other items

were initially proposed to load on Self-Efficacy; these were items 3, 15, and 50. Item 3, which asked students if they knew that they would do well in reading next year, did not load on any of the dimensions. Item 15, which asked students if they learn more from reading than other students in the class, loaded on the Challenge dimension. Item 50 also loaded on the Challenge dimension, asking students to agree with the statement, "In comparison to my other school subjects, I am best at reading." Of the remaining items, 23, 27, 28, and 52, which were previously theorized to load on the Avoidance dimension, only Items 23 and 28 loaded on the Avoidance dimension. Items 27 and 52 did not load on any of the dimensions.

Table 4.3: Rotated Standardized Factor Loadings for the Competency and Efficacy Beliefs Model

	Baker and Wigfield	Self-Efficacy	Challenge	Avoidance
Item 9	Self-Efficacy	.96	.27	-.059
Item 2	Challenge	.31	.59	-.18
Item 50*	Self-Efficacy	.26	.50	-.056
Item 3*	Self-Efficacy	.24	.34	-.059
Item 44	Challenge	.17	.63	-.077
Item 15*	Self-Efficacy	.14	.45	.096
Item 7	Challenge	.065	.48	-.023
Item 28	Work Avoidance	.013	-.13	.66
Item 52*	Work Avoidance	-.015	.052	.34
Item 27*	Work Avoidance	-.017	-.085	.37
Item 23	Work Avoidance	-.019	-.089	.58
Item 48	Challenge	-.059	.54	-.19
Item 26	Challenge	-.079	.44	.097

*Item loaded differently on the CFs in this study than on those conducted by Wigfield and Baker (1999).

The Goals Model. The GFIs for the Goals model are presented in Table 4.1. The rotated standardized factor loadings are presented in Table 4.4. Using the criteria of chi-squares divided by degrees of freedom, both the null and the six-factor model are a best fit for these items. However, upon inspection of the null model, eight factors were generated to explain 40.7% of the variance. Two of these factors were only defined by

one MRQ item, thus an attempt to interpret this model would generate a poor solution. Instead, a more plausible interpretation of the initially proposed six-factor model will be presented.

The six-factor model explained 35.8% of the variance. Items that had factor loading of .40 or higher were interpreted. Items that loaded differently on the Goals Model within this study compared to factor loadings in Baker and Wigfield's (1999) study are indicated with an asterisk (*) in Table 4.4. Item 14, which asked the students if their friends sometimes tell them they are a good reader, was theorized to load on the Recognition dimension; however, in this study it loaded on the Involvement dimension. Item 35, which asked the students if they lose track of time when reading about an interesting topic, was theorized to load on the Curiosity dimension but loaded on the Involvement dimension. Eight items (items 5, 12, 16, 19, 24, 31, 39, and 40) were found to have low factor loadings on all of the factors, thus making it difficult to determine with which factor they were associated.

Table 4.4: Rotated Standardized Factor Loadings for the Goals for Reading Model

	Baker and Wigfield	Involvement	Competition	Curiosity	Recognition	Grades	Importance
Item41	Involvement	.51	-.088	.048	.031	.15	-.038
Item46	Involvement	.47	.10	.18	.037	.096	-.11
Item10	Involvement	.47	-023	.059	.13	-.057	.089
Item30	Involvement	.45	.13	.25	.073	-.048	.16
Item14*	Recognition	.43	.14	.094	.23	.15	.16
Item33	Involvement	.42	.035	.18	.10	.041	.18
Item35*	Curiosity	.41	-.014	-.021	.14	.083	.10
Item16*	Curiosity	.36	.085	.34	.15	.24	.085
Item24*	Involvement	.33	.11	.092	.35	.064	.069
Item45	Curiosity	.28	.067	.55	-.019	.093	.068
Item53	Importance	.26	.097	-.026	.34	.37	.56
Item36	Recognition	.21	.089	.18	.55	.13	.19
Item54	Importance	.21	.088	.24	.068	.027	.65
Item17	Recognition	.18	.13	.048	.53	.14	-.024
Item5*	Curiosity	.17	-.014	.34	.10	.047	.23
Item31*	Recognition	.16	.15	.18	.25	.32	.11
Item19*	Grades	.16	.14	.099	.25	.33	.049
Item29	Recognition	.13	.19	.18	.50	.16	.16
Item37	Grades	.098	.092	.019	.16	.83	.063
Item13	Curiosity	.071	.071	.51	.17	.066	.084
Item8	Curiosity	.059	.055	.53	.089	-.029	-.067
Item39*	Grades	.044	.15	.32	.057	.23	.29
Item43	Competition	.041	.68	-.049	.15	.072	.012
Item51	Competition	.035	.70	.14	.045	.059	.32
Item40*	Grades	.034	.21	.22	.19	.22	.15
Item49	Competition	.010	.70	.029	.10	.13	.021
Item12*	Competition	-.073	.39	.15	.29	.013	-.13

*Item loaded differently on the CFs in this study than on those conducted by Wigfield and Baker (1999)

Social Purposes for Reading. The GFIs for the final model, Social Purposes for Reading, are presented in Table 4.1. The rotated standardized factor loadings are presented in Table 4.5. As with the previous models, the 2.0 chi-square criteria and factor loadings higher than .40 were used. Both the null and the hypothesized models met the 2.0 or lower criterion. The null model generated four factors explaining 39.67% of the variance. Inspection of the rotated factor matrix revealed one item explained the additional factors creating a situation where it is difficult to interpret the factor structure; therefore the two-factor model will be discussed.

The two-factor model explained 24.89% of the variance. Items 4 and 6 were initially theorized to load on the Compliance Dimension, but failed to load on either of the dimensions, Item 11 also did not load on any of the dimension. Items 1 and 20 were initially proposed to load on the Social Aspects dimension, but also failed to load on either of the dimensions. Item 38, which asked students if they enjoyed helping their friends with schoolwork related to reading, was initially proposed to load on the Social Aspects dimension, but loaded on the Compliance dimension. Item 42, which asked students if they tell their family about what they are reading, loaded similarly on both dimensions.

Table 4.5: Rotated standardized factor loadings for the Social Purposes for Reading Model

	Baker and Wigfield	Compliance	Social Aspects
Item 32	Compliance	.72	-.069
Item 47	Compliance	.59	.015
Item 25	Compliance	.50	-.026
Item 38*	Social	.49	.33
Item 42*	Social	.44	.43
Item 20*	Social	.28	.35
Item 1*	Social	.25	.13
Item 11	Social	.23	.34
Item 21	Social	.17	.44
Item 34	Social	.14	.60
Item 4*	Compliance	-.049	.19
Item 6*	Compliance	-.053	.18

*Item loaded differently on the CFs in this study than on those conducted by Wigfield and Baker (1999)

Summary. Even though the models meet the chi-square criterion established by Baker and Wigfield (1999) indicating the models were significant, the obtained chi-squares were significant at the $p = .05$ level indicating the proposed number of factors did not provide the best model fit. However, upon closer inspection of the dimensions, it was found that for the Competence and Beliefs model, three factors described the solution the

best. For the Goals Model, six factors described the solution and for the Social Purposes Model, two factors were the best solution. Even though many of the items did not load on their theorized dimensions obtained coefficient congruence estimates for 9 of the dimensions provided confirmation of similar factor structure between this study and the one completed by Baker and Wigfield (1999).

Factor Analysis (n =64).

To determine if the same dimensions of the MRQ appeared in a sample of students with LRD (n=64), three additional factor analyses were constructed using only students with LRD. The same proposed theoretical models were used for these analyses (Competence and Efficacy Beliefs, Goals for Reading, and Social Purposes), as were the 2.0 chi-square and the identification of factor loadings greater than .40 criteria. The GFIs for these models are presented in Table 4.6. Using the criteria for goodness-of-fit for the Competence and Efficacy Belief's models containing three subscales, the chi-square divided by degrees-of-freedom ratios were under 2.0 indicating the models were good fits. In addition, none of the generated chi-squares were significant, suggesting the null hypothesis should not be rejected. This provides validation of the proposed dimensions within a sample of students with LRD. However, as with the entire sample confirmatory analysis, many of the MRQ items did not perform as expected. To determine if the factor structures were similar to those produced by Baker and Wigfield (1999), the coefficient of congruence formulas were used. These estimates are provided in Table 4.7.

Table 4.6 Goodness-of-Fit Indices for the Factor Models for students with LRD

	df	X^2	X^2/df
Self-Efficacy-Challenge-Avoidance model Three Factor Model	42	21.22	1.98
Goals models Six Factor Model	n/a	n/a	n/a
Social-Compliance Models Two Factor Model	26	17.74	1.47

Note. * $p \leq .05$. **$p \leq .01$.

Table 4.7: Congruence Coefficients for the 11 dimensions of Reading Motivation for Models using LRD Students

Dimension	Coefficient of Congruence	Root Mean Square
Self-Efficacy	.975	.172
Challenge	.809	.349
Work Avoidance	.761	.327
Curiosity	N/A	N/A
Involvement	N/A	N/A
Importance	N/A	N/A
Recognition	N/A	N/A
Grades	N/A	N/A
Competition	N/A	N/A
Social	.814	.373
Compliance	N/A	N/A

Competence and Efficacy Beliefs Model. The rotated standardized factor loadings for the Competence and Efficacy Beliefs model are presented in Table 4.8. The majority of the items were found to function differently within the sample of students with LRD when compared to Baker and Wigfield's (1999) study. These items are identified in Table 4.8 with an asterisk (*). The three-factor model accounted for 35.1% of the variance. Item 50, which states "In comparison to my other school subjects, I am best at reading" was theorized to load on Self-Efficacy and loaded on this dimension as well as

on the Challenge dimension. Both Items 7 and 26 were theorized to load on Challenge, but loaded on Self-Efficacy. Item 2, which stated, "I like hard, challenging books" and was theorized to load on the Challenge dimension, loaded on this dimension, but also loaded on Self-efficacy. Four items (9, 15, 27, and 52) had factor loadings too small to interpret.

Table 4.8: Rotated Standardized Factor Loadings for the Motivation Scales for LRD Students

	Baker and Wigfield	Challenge	Self-Efficacy	Avoidance
Item 44	Challenge	.98	.026	.21
Item 50*	Self-Efficacy	.56	.47	-.22
Item 48	Challenge	.52	.27	.063
Item 52*	Work Avoidance	.16	.15	.023
Item 9*	Self-Efficacy	.33	.33	-.11
Item 7*	Challenge	.14	.62	.053
Item 26*	Challenge	.10	.51	-.033
Item 2*	Challenge	.41	.48	-.031
Item 3	Self-Efficacy	.20	.46	.26
Item 15*	Self-Efficacy	.046	.30	.059
Item 23	Work Avoidance	.0013	-.035	.75
Item 28	Work Avoidance	-.078	.075	.45
Item 27*	Work Avoidance	.14	.041	.27

*Item loaded differently on the CFs in this study than on those conducted by Wigfield and Baker

The Goals Model. The Goals model for reading, which theoretically contained six dimensions of reading motivation (Curiosity, Involvement, Importance, Recognition, Grades, and Competition), was unable to iterate successfully. Thus, no factor matrix containing maximum likelihood estimates was produced. This may be due to the small sample size being used (n = 64) or the type of estimates being generated.

The Social Purposes for Reading Model. The two-factor model explained 34.85% of the variance. Several items were found to function differently in this study when compared to Wigfield and Baker's (1999) study. These items are identified in Table 4.9

with an asterisk (*). Item 47, which stated "I always try to finish my reading on time," loaded similarly on both the Social dimension and Compliance dimensions. Item 25, which states, "I always do my reading work exactly as the teacher wants it" and was theorized to load on the Compliance dimension, loaded on the Social Aspects dimension. Item 32, which states "Finishing every reading assignment is very important to me" and was theorized to load on the Compliance dimension, loaded on both dimensions. Both items 20 and 42 were theorized to load on the Social Aspects dimension; both loaded on the Compliance dimension. Three items (4,6, and 34) had factor loadings too small to interpret.

Table 4.9: Rotated Standardized Factor Loadings for the Motivation Scales for LRD

	Baker and Wigfield	Social	Compliance
Item 21	Social	.82	-.078
Item 47*	Compliance	.52	.55
Item 25*	Compliance	.46	.32
Item 1	Social	.45	.086
Item 38	Social	.44	.21
Item 32*	Compliance	.42	.47
Item 11	Social	.42	.11
Item 34*	Social	.28	.39
Item 42*	Social	.23	.53
Item 20*	Social	.15	.55
Item 4*	Compliance	.046	.024
Item 6*	Compliance	-.081	.16

*Item loaded differently on the CFs in this study than on those conducted by Wigfield and Baker

Summary. When exploring the confirmation of the 11 dimensions among a sample of students with LRD, two models were validated. The Competency and Efficacy Beliefs model was found to contain three factors and based on the estimates obtained from the coefficient congruency formulas, all three dimensions were validated and similar to those obtained by Baker and Wigfield (1999). The Social Purposes for

Reading model was defined by two dimensions: Social Aspects and Compliance. Due to the small sample size, confirmation of the six factors proposed to be within the Goals model were unable to be confirmed.

Section II: Examination of the Dimensions of Reading Motivation

Scale-scores were created for each dimension of the MRQ by using the proposed model presented by Baker and Wigfield (1999; see Table 4.6). Responses to the items on each dimension were summed and then divided by the corresponding number of questions to obtain a mean score, which was used to represent the student's motivation level on that particular dimension. Cronbach alphas were computed on each scale to provide an indication of the internal reliability on the MRQ (see Table 4.10). Reliabilities (alphas) greater than .60 are appropriate for screening use (Marsh, G., 2000). Seven of the subscales had alphas ranging from .61 to .69, indicating fairly good screening capabilities. The Competition scale obtained an alpha of .74 indicating reasonably good internal consistency. Three scales, the Compliance scale (alpha = .39) the Work Avoidance scale (alpha = .55), and the Grades scale (alpha = .55), had questionable reliability.

Table 4.10: Summary of the Dimensions and the Items Used to Create the Scale Score

Dimension	Items	No.of Items	Alpha	M	SD
Self-Efficacy	3, 9, 15, 50	4	.61	3.11	0.60
Challenge	2, 7, 26, 44, 48	5	.67	3.19	0.64
Avoidance	23, 27, 28, 52	4	.55	2.39	0.80
Curiosity	5, 8, 13, 16, 35, 45	6	.61	3.19	0.57
Involvement	10, 24, 30, 33, 41, 46	6	.63	3.21	0.59
Importance	53, 54	2	.64	3.47	0.66
Recognition	14, 17, 29, 31, 36	5	.69	3.36	0.59
Grades	19, 37, 39, 40	4	.55	3.42	0.56
Competition	12, 18, 22, 43, 49, 51	4	.74	3.04	0.72
Social	1, 11, 20, 21, 34, 38, 42	7	.66	2.56	0.64
Compliance	4, 6, 25, 32, 47	3	.39	2.87	0.50

The mean scores and the standard deviations for each scale are also presented in Table 4.6. All of the dimensions of reading motivation, except Work Avoidance, were above the mid-point of 2.5, indicating not only that the students' responses were skewed, but also that students' self-reported themselves as being motivated to read with respect to most of the dimensions. The mean on Work Avoidance was under 2.5. This was expected, considering the items were stated in a negative way (e.g., I don't like...).

Correlations among the 11 dimensions are presented in Table 4.11. In general, most of the correlations were positive and statistically significant at the .01 level. It appears that all the non-significant correlations were found with the Avoidance scale. Baker and Wigfield (1999) initially hypothesized that negative correlations would occur with the Avoidance scale given the negative context of the Avoidance items. In this study, negative correlations did occur, but they were not found to be statistically significant.

Table 4.11: Correlations Among the 11 Dimensions of Reading Motivation

Variable	1	2	3	4	5	6	7	8	9	10
1. Efficacy										
2. Challenge	.57**									
3. Avoidance	-.12*	-.19**								
4. Curiosity	.37**	.55**	-.10							
5. Involv.	.39**	.54**	-.10	.51**						
6. Importance	.37**	.44**	-.05	.39**	.40**					
7. Recog.	.46**	.42**	.02	.41**	.48**	.47**				
8. Grades	.23**	.31**	.05	.40**	.30**	.45**	.47**			
9. Compet.	.36**	.31**	.12*	.19**	.23**	.31**	.43**	.40**		
10. Social	.35**	.44**	-.07	.49**	.51**	.44**	.46**	.41**	.23**	
11. Compli.	.08	.18**	.11*	.28**	.20**	.37**	.22**	.42**	.23**	.32**

*significant at .05. **significant at .01.

Children's reading motivation in relation to grade level, gender, and ethnicity.

An analysis of covariance was conducted examining the differences between fourth and fifth graders using gender and ethnicity as covariates (Table 4.12). Significant main effects due to grade level were noted on the following reading motivation dimensions: Self-Efficacy ($F(2, 326) = 10.42$, $p = .002$), Curiosity ($F(2,326) = 6.88$, $p = .01$), Involvement ($F(2, 326) = 6.96$, $p = .01$), Importance ($F(2, 326) = 12.92$, $p = .001$), Recognition ($F(2, 326) = 12.75$, $p = .001$), Grades ($F(2, 326) = 9.84$, $p = .003$), and Social Aspects ($F(2, 326) = 5.47$, $p = .02$). Gender was only a significant on the Compliance dimension ($F(2, 326) = 5.75$, $p = .02$) and Ethnicity was significant on Social Aspects ($F(2, 326) = 4.67$, $p = .02$) and on Compliance ($F(2, 326) = 4.62$, $p = .04$).

Table 4.12: Significant Findings From the Analysis of Covariance

	Fourth		Fifth		Main Effect Grade		Covariates Gender		Ethnicity	
Dimension	M	SD	M	SD	F	P	F	p	F	P
Efficacy	3.19	.59	3.06	.60	10.42	.002	.002	.96	.003	.96
Challenge	3.25	.65	3.16	.63	2.39	.13	1.09	.30	.10	.75
Curiosity	2.36	.80	2.41	.80	6.88	.01	1.18	.28	2.11	.15
Work Avoidance	3.30	.52	3.10	.59	.57	.45	.91	.35	.67	.42
Involvement	3.23	.58	3.16	.60	6.96	.01	.03	.87	1.31	.26
Importance	3.60	.57	3.38	.70	12.92	.001	1.38	.25	1.87	.18
Recognition	3.47	.54	3.27	.61	12.75	.001	.05	.83	1.50	.23
Grades	3.53	.52	3.35	.57	9.84	.003	1.19	.28	.001	.98
Competition	3.19	.69	2.93	.71	3.55	.06	1.33	.25	.90	.35
Social Aspects	2.68	.61	2.47	.65	5.47	.02	1.81	.18	4.76	.02
Compliance	2.99	.52	2.79	.47	.93	.34	5.75	.02	4.62	.04

Children's Level of Motivation on Compliance in Relation to Grade Level, Gender and Ethnicity.

To explore the mean difference between students in fourth and fifth grade in relation to gender and ethnicity a three-way analysis of variance was conducted. The means and standard deviations are presented in Table 4.13. None of the two-way interactions (Gender x Grade, Gender x Ethnicity, Grade x Ethnicity), nor the three way interaction (Gender x Grade x Ethnicity) were found to be significant. Significant main effects were attributed to Grade ($F(1, 323) = 12.54$, $p = .01$) and Ethnicity ($F(1, 323) = 7.20$, $p = .01$).

Table 4.13: Compliance Means and Standard Deviations for Fourth and Fifth Graders

Grade	Gender	Ethnicity	N	M	SD
Fourth	Boys	White	51	2.92	.53
		Non-White	23	3.06	.41
	Girls	White	48	2.94	.56
		Non-White	16	3.21	.44
Fifth	Boys	White	70	2.73	.38
		Non-White	23	2.97	.55
	Girls	White	67	2.79	.36
		Non-White	33	2.79	.72

Children's Level of Motivation on Social Aspects in Relation to Grade Level and Ethnicity.

To explore the relationship between Grade Level and Ethnicity on Social Aspects, a two-way analysis of variance was conducted. The means and standard deviations by grade level and ethnicity for the Social Aspects dimensions are presented in Table 4.14. The interaction effect related to Grade Level and Ethnicity was not found to be significant. However, significant main effects were attributed to Grade, $F(1, 327) = 7.06$, $p = .01$; and Ethnicity, $F(1, 327) = 5.81$, $p = .02$.

Table 4.14: Social Aspect Means and Standard Deviations by Grade Level and Ethnicity

Grade	Ethnicity	n	M	SD
Fourth	White	99	2.62	.60
	Non-White	39	2.81	.64
Fifth	White	137	2.41	.67
	Non-White	56	2.60	.60

Relations of Children's Reading Motivation to Reported Reading Activity.

Seventy-eight percent of the sample indicated they read a book for fun during the week prior to responding to the questionnaire. Forty-nine percent of the sample indicated they read everyday for fun, 27.8% said they read for fun once a week, 14.2% indicated they read for fun once a month, and 8.8% indicated they never read for fun. Correlations between students' reported reading activity and the 11 dimensions of reading motivation are presented in Table 4.15. Eight of the dimensions were found to be statistically correlated with reading activity, suggesting the higher the level of reading motivation for that dimension, the higher the level of reading activity, with the expected exception of Work Avoidance. A significant negative correlation exists between Work Avoidance and reading activity, suggesting the existence of an inverse relationship.

Table 4.15: Correlations Between the 11 Dimensions and Reading Activity

Variable	Reading Activity	
1. Efficacy	.37	**
2. Challenge	.43	**
3. Avoidance	-.14	*
4. Curiosity	.26	**
5. Involvement	.42	**
6. Importance	.30	**
7. Recognition	.31	**
8. Grades	.07	
9. Competition	.10	
10. Social Aspects	.31	**
11. Compliance	.02	

*p < .05 .05 (2-tailed). ** p < .01 (2-tailed).

Summary. The MRQ dimensions demonstrated fairly good internal consistency providing additional support for its use as an instrument to gauge students' levels of reading motivation. The sample in this study reported high degrees of motivation on

each of the 11 dimensions. In addition, the fourth graders appeared to have higher mean scores on the 11 dimensions than the fifth graders. Reader characteristics, such as Gender and Ethnicity, did not appear to be important covariates. Finally, reading activity was found to be positively related to the dimensions of reading motivation.

Section III: Students with LRD Compared to Students without LRD on the MRQ

A series of analyses were used to examine differences between children with and without LRD. Demographics for both samples are presented in Table 4.16. The 3 to 1 male to female ratio typical in the population of students with LRD is evident in this study. The non-White makeup for students with LRD is a combination of all non-White students: African Americans (n = 6), Hispanics (n = 17), and Asian (n = 2).

Table 4.16: Demographics of the LRD and Non-LRD Samples.

	Fourth		Fifth		Males		Females		White		Non-White	
	n	%	n	%	n	%	n	%	n	%	n	%
Non-LRD (n = 267)	110	41.2	157	58.8	120	44.9	147	55.1	198	74.2	69	25.8
LRD (n=64)	28	43.8	36	56.3	47	73.4	17	26.6	38	59.4	26	40.6

The correlations for both groups of students are presented in Table 4.17. Similar to the findings presented for the entire sample, Work Avoidance correlations were found to be negative but not statistically significant, with the exception of Involvement (r = -.15), Curiosity (r= -.17) and Social Aspects (r = -.13) for students without LRD; Work Avoidance with Competition (r - .31) for students with LRD. High correlations were found for the students with LRD between Challenge and Efficacy (r = .64) and

Challenge and Involvement (r = .67). High correlations were similar for students without LRD between: Challenge and Efficacy (r = .53) and Curiosity and Involvement (r = .55).

Table 4.17: Correlations Among the 11 Dimensions of Reading Motivation for Students with and without LRD

Variable	1	2	3	4	5	6	7	8	9	10
1. Efficacy										
LRD										
Non-LRD										
2. Challenge										
LRD	.64**									
Non-LRD	.53**									
3. Work Avoidance										
LRD	.07	.20								
Non-LRD	-.18**	-.28**								
4. Curiosity										
LRD	.55**	.58**	.19							
Non-LRD	.34**	.55**	-.17**							
5. Involvement										
LRD	.51**	.67**	.09	.55**						
Non-LRD	.35**	.50**	-.15*	.50**						
6. Importance										
LRD	.40**	.41**	.06	.39**	.42**					
Non-LRD	.41**	.46**	-.08	.39**	.41**					
7. Recognition										
LRD	.54**	.48**	.14	.41**	.44**	.46**				
Non-LRD	.45**	.41**	-.01	.41**	.49**	.47**				
8. Grades										
LRD	.37**	.29*	.11	.42**	.27*	.55**	.52**			
Non-LRD	.25**	.34**	.04	.40**	.31**	.43**	.47**			
9. Competition										
LRD	.43**	.39**	.31*	.30*	.32*	.46**	.45**	.58**		
Non-LRD	.35**	.28**	.07	.16**	.20**	.27**	.42**	.36**		
10. Social										
LRD	.54**	.58**	.19	.62**	.55**	.50**	.48**	.46**	.48**	
Non-LRD	.33**	.41**	-.13*	.46**	.50**	.43**	.46**	.39**	.17**	
11. Compliance										
LRD	.33**	.38**	.24	.51**	.45**	.49**	.37**	.50**	.30*	.58**
Non-LRD	.10	.19**	.08	.22**	.15*	.34**	.21**	.39**	.23**	.25**

Note. LRD = students with learning/reading disabilities; Non-LRD = students without learning/reading disabilities. * significant at .05. ** significant at .01.

Differences Between Students with LRD and without LRD.

The results from the one-way analysis of variance (ANOVA) are presented in Table 4.18. The mean scores on each of the dimensions for each group of students are also presented this table. Similar to the findings presented for the entire sample, all the means for the students with LRD, with the exception of Work Avoidance, fell above the mid-point of 2.5, indicating not only that responses from students with LRD were skewed, but also that students with LD characterized themselves as motivated with respect to all of these dimensions. Differences between students with and without LRD were found to be statistically significant on four dimensions: Self-Efficacy ($F(1,329) = 32.79$, $p = .001$), Challenge ($F(1,329) = 8.26$, $p = .004$), Grades ($F(1,329) = 3.83$, $p = .01$), and Compliance ($F(1, 329) = 18.92$, $p = .001$). Non-LRD students obtained higher scores than did students with LRD on the Self-Efficacy and Challenge, while students with LRD scored higher on the Compliance dimension than the students without LRD.

Table 4.18: Means and Standard Deviations for the Motivation Scales for Students with and without LRD

	Non-LRD		LRD		
Motivation Scale	M	SD	M	SD	F
Self-Efficacy	3.20	.54	2.74	.70	32.79**
Challenge	3.25	.62	3.00	.71	8.26**
Work Avoidance	2.38	.82	2.39	.73	0.04
Curiosity	3.18	.57	3.20	.58	0.01
Involvement	3.23	.57	3.15	.70	1.04
Importance	3.45	.66	3.53	.62	0.73
Recognition	3.37	.59	3.30	.58	0.72
Grades	3.39	.55	3.55	.56	3.83*
Competition	3.05	.70	2.99	.79	0.37
Social Aspects	2.54	.64	2.60	.66	0.47
Compliance	2.81	.48	3.11	.51	18.92**

Note. LRD = Learning/Reading Disabilities. *p<.01. **P<.001.

Relationships Due to Gender, Grade Level, and Ethnicity.

To examine the effects of Gender, Grade Level, and Ethnicity on students with and without LRD, these variables were included as covariates in an analysis of covariance (ANCOVA). The results of the ANCOVA are summarized in Table 4.19.

Similar to the findings on the ANOVA, between-group differences (main effects) were statistically significant on Efficacy ($F(1, 326)= 30.04$, $p = .001$), Challenge ($F(1, 326) = 8.65$, $p = .004$), and Compliance ($F(1,326) = 18.43$, $p = .001$). Grade Level was a significant covariate on all the dimensions except Challenge and Work Avoidance. Gender was significant only on Social Aspects ($F(1, 326) = 11.23$, $p = .01$); Ethnicity was significant on Curiosity ($F(1,326) = 6.14$, $p = .01$) and Social Aspects ($F(1,326) = 4.99$, $p = .03$).

Table 4.19: Means, Standard Deviations, and Significant Tests for Students with and without LRD on the 11 Dimensions of Reading Motivation

					Main Effect		Covariate					
	Control		LRD		Group		Gender		Grade		Ethnicity	
Dimension	M	SD	M	SD	F	p	F	p	F	p	F	p
Efficacy	3.20	.54	2.74	.60	30.04	.001	2.20	.14	6.17	.01	1.99	.16
Challenge	3.25	.62	2.99	.71	8.65	.004	.10	.75	2.11	.15	2.61	.11
Curiosity	3.18	.57	3.20	.58	.08	.78	.17	.68	9.77	.002	6.14	.01
Avoidance	2.38	.82	2.39	.73	.04	.84	.00	.98	.35	.56	.57	.45
Involvement	3.23	.57	3.15	.70	.67	.42	2.33	.13	3.96	.05	1.07	.30
Importance	3.45	.66	3.53	.62	.77	.38	.89	.35	9.70	.002	.68	.41
Recognition	3.37	.59	3.30	.58	.62	.43	.91	.34	9.98	.002	.71	.40
Grades	3.39	.55	3.55	.56	3.62	.06	.12	.74	9.25	.003	.01	.92
Competition	3.05	.70	2.99	.79	.66	.42	.02	.90	10.83	.001	.91	.34
Social	2.54	.64	2.60	.66	1.18	.27	11.23	.01	9.95	.002	4.99	.03
Compliance	2.81	.48	3.11	.51	18.43	.001	1.81	.18	13.80	.001	3.34	.07

Section IV: Discriminant Analysis

All of the students and their responses were used to generate mean scores on the 11 different dimensions of reading motivation. Using a discriminant analysis, 18% of the variance between students with and without LRD was explained by using the 11 dimensions as independent variables (Wilks' Lambda = .82, p = .001). Table 4.20 presents standardized coefficients and classification coefficients for the 11 dimensions of reading motivation. Self-Efficacy (.85) was the variable with the highest loading, followed by Compliance (-0.51) and Challenge (0.31). Seventy-four percent of the original group cases were identified correctly. Seventy of the non-LRD students were classified as LRD and 17 of the students with LRD were classified as non-LRD (See Table 4.21).

Table 4.20: Classification Coefficients

Dimension	Standardized Coefficient	Classification Coefficients Non-Ld	LD	Wilks' Lambda	
Self-Efficacy	0.85	5.21	3.45	.910	**
Challenge	0.31	1.09	.52	.975	**
Curiosity	-0.16	3.10	3.43	1.00	
Work Avoidance	0.18	4.11	3.84	1.00	
Involvement	0.05	3.82	3.72	.997	
Importance	-.19	.82	1.16	.998	
Recognition	-0.02	1.72	1.75	.998	
Grades	-0.14	4.38	4.67	.988	
Competition	-0.06	-.28	-.18	.999	
Social Aspects	-0.16	-2.99	-2.71	.999	
Compliance	-0.51	6.11	7.34	.946	**
(Constant)		-42.91	-42.98		

Note. ** $p < .01$.

Table 4.21: Classification Results for the 11 Dimensions of Reading Motivation

Group	Predicted Non-LRD %	Predicted LD %	Centroid
Non-LRD	73.7	26.3	.229
LRD	26.6	73.4	-.953

Note: LRD = Learning/Reading Disabilities.

Summary. Students with LRD reported high levels of reading motivation for each of the 11 dimensions of reading motivation. Significant differences between students with and without LRD were found on four of the dimensions: Self-Efficacy, Challenge, Grades, and Compliance. However, when Grade Level was used as a covariate, the Grades dimension was no longer significant. Thus, students with LRD demonstrated lower levels of reading motivation on Self-Efficacy and Challenge and higher levels of reading motivation on Compliance.

CHAPTER V: DISCUSSION

The results from this study provide additional empirical validation of the three models proposed to encompass the Motivation for Reading Questionnaire (MRQ). Scale score means were used to differentiate between students with and without LRD. The approaches taken in this study were to confirm the validity of the MRQ by (a) confirming the multidimensional construct of reading motivation within a sample of fourth and fifth grade students, (b) confirming the multidimensional construct within a sample of students with learning/reading disabilities (LRD), and (c) determining if differences existed along the 11 dimensions of reading motivation between students with and without LRD.

Multidimensional Construct of Reading Motivation

Based on the results obtained from the factor analyses using the goodness-of-fit criteria established by Wigfield and Baker there appears to be a multidimensional construct of reading motivation underlying the framework of the MRQ. This study was able to confirm similar factor structure for the three models verifying nine of the proposed 11 dimensions. These dimensions included Challenge, Work Avoidance, Curiosity, Involvement, Importance, Recognition, Grades, Competition, and Social Aspects. Although Work Avoidance, Grades, and the Compliance dimensions were identified as significant dimensions within the theoretical framework, each dimension demonstrated poor internal reliability. For the Work Avoidance scale, this artifact may reflect the fact that the items that make up this dimension tap several different aspects of reading (vocabulary, stories, characters), some of which students might or might not want

to avoid. For the Compliance dimension, this may have also been due to the wording of the items, especially for Items 4 and 6. Similar findings were presented by Baker and Wigfield (1999); instead of using the all the items to define Compliance, they dropped Items 4 and 6 because due to poor fit.

To determine if the identified factors were similar in factor structure to those identified by Baker and Wigfield (1999), congruence coefficient estimates were generated for each dimension. Nine of the dimensions were found to be similar in factor structure. These included Challenge, Work Avoidance, Curiosity, Involvement, Importance, Recognition, Grades, Competition, and Social Aspects. The congruence coefficients generated for Self-Efficacy demonstrated a discrepancy between the factor structure generated by Baker and Wigfield (1999) and the one obtained in this study. This may have been due to the very high factor loading obtained for Item 9, which accounted for 92% of the factor variance, and the very low factor loadings associated with the other items proposed to load on the Self-Efficacy dimension. As previously indicated, congruence coefficients were not obtained for the Compliance dimension. However, when Items 4 and 6 were dropped from the analysis and coefficient estimates were generated (CC = .875; RMS = .258), it was concluded that similar factor structure existed for this dimension.

Furthermore, each identified dimension of reading motivation can be theoretically linked to constructs from the general motivation literature suggesting that there is a multidimensional construct underlying reading motivation. The reading dimensions of Curiosity and Importance are examples of intrinsic motivation, while Grades is an

example of extrinsic motivation (Deci & Ryan, 1985; Maehr, 1976; Miller, Behrens, Green, & Newman, 1993). Recognition and Competition are characteristic of students exhibiting an external locus of control (Deci, Vallerand, Pelletier, & Ryan, 1991). Self-efficacy, Challenge, and Work Avoidance are analogous to ability beliefs and efficacy constructs (Eccles, et al., 1983; Meece, Wigfield, & Eccles, 1990). Finally, the Social Aspects dimension introduces the importance of sociocultural ideals and values (Slavin, 1996).

Confirmation of these dimensions within a sample of students with LRD is still, to some degree, undetermined. The results from this study confirmed the factors within the Competence and Efficacy Beliefs Model and the Social Model, however, results failed to identify significant factors within the Goals Model. The failure of the statistical application to generate a factor model may have been due to the small sample size representing the population of students with LRD.

Limitations Related to Confirmatory Factor Analysis.

Several limitations related to the factor analysis results presented in this study. First, the use of the chi-square goodness-of-fit index as an indicator of model fit is not the best indicator to confirm whether the observed factor structure is similar to one that is being proposed. The chi-square statistic is traditionally used to determine if the given model provides an acceptable fit of the observed data (Long, 1983). To determine the fit, the observed covariance matrix is compared to an estimated covariance matrix. An imperfect fit will occur to some degree because of error occurring within the observed data; this degree of error is represented by chi-square value. This obtained value is

compared to a critical value at a predetermined alpha level of significance generated from a chi-square distribution representing the degrees of freedom. If the obtained value is greater than the critical value, the null hypothesis is rejected indicating that the proposed model did not generate the theoretical model that is being confirmed. If the obtained chi-square value were smaller than the critical value the null hypothesis would not be rejected indicating that the proposed model is similar to the theoretical model.

Several limitations are associated with this statistic. They include the violations of the assumptions of normality within the data and large sample size. Both of these assumptions are generally violated during the application of confirmatory factor analysis (Long, 1983). Given the significant chi-square values obtained in this study, it will be assumed that one, if not both of these assumptions, was violated. Unfortunately, very little information is available related to the effects of these violations when maximum likelihood estimates are used as estimators in the confirmatory factor model (Long, 1983). In addition, the sample size representing the students with LRD was too small to obtain a factor structure for the Goals Model. Lawley and Maxwell (1971) suggest having at least 51 more cases than the number of variables under consideration. This assumption was not met when the analyses were run using the LRD group.

A second limitation of the confirmatory analysis is the assumption that the numerical values associated with the Likert scale, an ordinal variable, do not distort the underlying properties associated with measuring levels of motivation. That is, there is an assumption that all points along and in between the defined points of the 4-point Likert scale are equally distant from one another. However, it is fortunate that the correlation

and covariance coefficients obtained during factor analysis are fairly robust to violations of this assumption (Kim, 1975).

Finally, neither the Baker and Wigfield (1999) study nor this study confirmed the 11 dimensions of reading motivation. To confirm these dimensions one factor analysis should be conducted examining the underlying structure of all 54 items of the MRQ. This is proposed for a future research project. Ideally, obtaining the information from the 1999 study and combining it with this study would generate a large enough sample to determine if the underlying structure of the MRQ contains 11 dimensions.

Differences Between Students With and Without LRD

Significant differences between students with and without LRD did occur among four of the reading motivation dimensions. Students with LRD were found to have lower mean scale scores on Self-Efficacy and Challenge. These findings support the findings presented by Chapman (1988), Grolnick and Ryan (1990), and Rogers and Saklofske (1985). They stated that students with LRD see themselves as less competent when compared to same aged peers. In addition, the results from this study support the findings presented by Fulk et al. (1998) who found that students with LRD were more likely to avoid challenging work associated with reading because of their perception of the degree of difficulty associated with engaging in and completing the tasks.

One of the interesting findings from this study was the higher mean score on Compliance for the students with LRD. It appears that students with LRD are more likely to read because someone tells them to do so. This confirms the notion that students

with LRD have an external sense of locus of control; a belief that they are not in control of their academic successes and failures (Bryan, 1986; Fulk et al., 1998).

Limitations Associated with Exploring Differences

The limitations discussed here are concerns originating from the students and the researcher. They are not based on any founded literature, but on casual observations made while administering the MRQ. Several students noted that the questionnaire was too long. In addition, they felt that several of the items were confusing. For instance, Item 25 asked students if they always did their reading work exactly as the teacher wants it. Approximately 4 to 5 students in each classroom wanted clarification on this item. As the administrator of the MRQ, the researcher was unable to help them. Thus, while a high percentage of the students responded that the item was a lot like them (72%), generating very little variability on this item, the validity of this item is somewhat suspect. Students were also confused on three of the Work Avoidance items. These items started with the phrase, "I don't like..." This negative format forced the students to think in reverse causing confusion about how to respond. When this item was read, the researcher would remind students that they needed to determine how much the item was like them or not like them. Finally, several students indicated that the wording of Item 30, I feel like I make friends with people in good books, was "silly".

The researcher agreed with the students about the length of the MRQ. For students who appeared to be good readers, those that went ahead of the researcher while she was reading the items, the length of the MRQ seemed appropriate. These students were able to complete the questionnaire five to 10 minutes before the rest of the group.

For students who were identified as LRD, the MRQ appeared to be too long. Even though these students finished the questionnaire within the planned 20 minutes, they appeared to give more consideration to the first 20 items, than to the remaining items.

Using the MRQ to Identify Students

The MRQ was found to be useful at discriminating between fourth and fifth graders and between students with and without LRD on several of the proposed 11 reading motivation dimension. Fourth graders were found to have higher levels of reading motivation on Efficacy, Curiosity, Involvement, Importance, Recognition, Grades, and Social Aspects than fifth graders. This finding also supports the developmental findings related to competency and efficacy beliefs. Researchers have found that as students progress through elementary school their competency and efficacy beliefs decline (Dweck & Elliot, 1983; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991).

Students with LRD demonstrated lower degrees of Self-Efficacy and Challenge while having higher levels of reading motivation on Grades and Compliance than the students without LRD. Given the above rationale about how students with LRD perceive themselves as readers and reading tasks, it is not surprising that these three reading motivation constructs differentiated these students from their peers. These findings confirm those presented by Guthrie, Wigfield, Metsala, & Cox (1999), they stated that students with high self-efficacy were able to obtain satisfaction by engaging in and mastering complex reading concepts.

Additional Limitations of This Study

There were several additional limitations that may have influenced the results of this study. First, the study does not suggest that the discussed theorized dimensions of reading motivation are all inclusive. The results from this study suggest that reading motivation is multidimensional. Children should not be characterized as either motivated or not motivated to read. Instead, one needs to investigate and find out specifically what the students' reasons, purposes, and goals are for engaging in the reading process. Moreover, the set of items chosen for inclusion within the framework of the MRQ are not exhaustive (Baker & Wigfield, 1999). Many other questionnaires can and should be designed to unearth other aspects of reading motivation.

Second, it is imperative that one takes note of the restricted grade range included in the sample. Students with reading disabilities who were not in the 4^{th} or 5^{th} grades were not included in this study. Therefore, these findings cannot be generalized to students in other grades, nor to other students with LRD.

Third, self-report measures have inherent limitations. A major concern is that students may have completed the MRQ in such a way as to make themselves look good or to please the researcher. The researcher used several strategies to alleviate this concern. First, when the researcher was in the field collecting data, she stressed the importance of anonymity, and the importance of telling the truth. She specifically asked students to be truthful and to not think about what they thought the researcher wanted them to say. Second, the researcher examined the students' response patterns to determine if the students' responses differed from one another. Third, the response

patterns on each item were analyzed and noted to contain some variance. Finally, item-total correlations were also obtained for each dimension to ensure that each item correlated with the proposed dimension.

Implications for Teachers

This study attempted to explore differences between students with and without LRD based on the 11 proposed dimensions of reading motivation generated by the MRQ. Initially, a confirmation of these dimensions was attempted through the use of factory analysis. Given the limited sample size of students with LRD, it is not surprising that the Goals Model, which contained six of the reading motivation dimensions was unable to provide a factor matrix confirming the underlying structure of this model. However, the factor structure was confirmed for the Competency and Efficacy Beliefs and the Social Purposes for Reading Models.

Based on the scale score means derived from the 11 dimensions, differences found between the non-LRD and LRD students provided additional evidence that students with LRD are motivated to read for different motivational purposes than non-LRD students. By understanding that students with LRD are motivated to read differently than non-LRD students, teachers can apply different reading methods or approaches when working with LRD students. Thus, teachers are encouraged to use the MRQ as a resource that (a) enables students to think about what motivates them to read and (b) describes some of the factors that motivate students to read.

As a sidebar, it is interesting to note that after the questionnaire was given to many of the students, some wanted to share their reading experiences with the researcher.

Some students told the researcher about their favorite book, the time they read to a kindergartener, or when they used to read with their grandparents. Therefore, MRQ was found to open the doors for discussion of how, when, and with whom a person can enjoy text. Thus, the MRQ might be more than a descriptive battery, in itself, it might be one of the tools teachers can use to initiate discussions to learn more about students' interests and motivate students to read.

Suggestions for Future Research and Practice

The notion that reading motivation is multidimensional is relatively new to the field of reading and to the field of learning disabilities. In addition, the MRQ has not been fully validated as an instrument containing 11 dimensions of reading motivation. Further studies investigating these dimensions, as well as the three reading models theorized by Baker and Wigfield (1999) is suggested. Given this, and the new research emerging relating social and environmental cues to students' reading achievement (Wentzel, 1996), researchers should continue to redefine and develop instruments to measure the multidimensional constructs related to reading. Further investigations into how students with LRD perform on these constructs is also crucial to helping the field of special education develop strategies and programs aimed at increasing, not only students' motivation to read, but also their reading achievement.

In conclusion, this study confirmed that the MRQ could be used to identify and measure a wide variety of reading motivation dimensions. The scores obtained on the MRQ provide an indication of where students, regardless of LRD status, obtain motivation to engage in the reading process. In addition, students with LRD were found

to score differently from their peers not identified with LRD on three of the reading motivation dimensions when Grade Level, Gender, and Ethnicity were used as covariates. These dimensions included: Self-Efficacy, Challenge, and Compliance. Students with LRD were found to have lower scale score means on Self-Efficacy and Challenge and higher scale score means on Compliance. Implications for teachers suggest using the MRQ as a tool to describe the reading motivation constructs of students. Understanding the different dimensions of reading motivation can lead towards changes in teaching and curriculum instruction.

APPENDIX A: LETTER TO TEACHER

Dear _____:

I am completing research for a doctoral program at the University of Arizona and I am in need of your assistance as well as the assistance of your students. I am interested in exploring students' motivation for reading. In order to do so, I am asking 400 fourth and fifth grade students to fill out a questionnaire on reading motivation. This is a 56 item questionnaire which takes approximately 20 minutes to administer. Additionally, I am asking teachers to fill out a data summary sheet for each child who participates. This will be an additional 1minute of your time per child.

To make this task as convenient as possible, I thought the time you set aside for silent reading or any other possible time that you choose would be ideal for me to conduct the following:

1. Initially visit your class to tell your students about the study. During this time I can answer any questions and pass out letters for the students' parents to read (approximate time 15 minutes).
2. One to two weeks later, I will return to collect the consent forms and meet with the students whose parents agreed to allow them to participate. At this time I will ask students if they want to participate, have them fill out a consent form, and then have them fill out a questionnaire. I will read the questionnaire items to them (approximately 20 minutes).

However, if you would rather take on the responsibility of administering the questionnaire yourself, then I would still like to personally visit your classroom and explain what I am doing to the students (approximately 15 minutes). You can then tell me how many student consent forms and questionnaires you will need. I will send these to you with a pre-stamped return envelope.

Either way your participation and your students' participation will be greatly appreciated! I will be compensating both you and the students. Teachers will receive a gift certificate to one of the local teaching supply stores and the students will each receive a "cool" two-pocket folder. If you should have any questions concerning the rights as a research subject, you can call the Human Subjects Committee office at 626-6721. Please return the bottom portion of this form by _____

Sincerely,

APPENDIX B: CONSENT FORMS

Dear Parents,

I am a graduate student at the University of Arizona and I have favor to ask of you. The final requirement for me to obtain my degree is to write a dissertation on a relevant educational theme. I have proposed conducting research on defining reading motivation as it pertains to 4th and 5th grade students. The enclosed letter is a formal explanation of the proposed study.

Specifically, what I am asking your child to do is to fill out one questionnaire pertaining to reading motivation. This should only take about 20 minutes of your child's time. To ensure that the time to participate in this study does not interfere with your child's program of study, I am asking for teachers to allow students to fill out the questionnaire during silent reading. The information provided by your child will be completely confidential and will be used by me for my dissertation.

If you should have any questions or concerns regarding this, please contact me at 696-5273 or the Human Subjects Committee at 626-6721.

Thank you,

Laurie Seder
Special Education Teacher
Rio Vista Elementary School
lseder@amphi.com

Understanding the Multidimensionality of Reading Motivation

YOU ARE BEING ASKED TO READ THE FOLLOWING MATERIAL TO ENSURE THAT YOU ARE INFORMED OF THE NATURE OF THIS RESEARCH STUDY AND OF HOW YOUR CHILD WILL PARTICIPATE IN IT, IF YOU SO CHOOSE TO ALLOW HIM/HER. SIGNING THIS FORM WILL INDICATE THAT YOU HAVE BEEN SO INFORMED AND THAT YOU GIVE YOUR CONSENT. FEDERAL REGULATIONS REQUIRE WRITTEN INFORMED CONSENT PRIOR TO PARTICIPATION IN THIS RESEARCH STUDY SO THAT YOU CAN KNOW THE NATURE AND RISKS OF YOUR CHILD'S PARTICIPATION AND CAN DECIDE TO ALLOW YOUR CHILD TO PARTICIPATE OR NOT TO PARTICIPATE IN A FREE AND INFORMED MANNER.

PURPOSE:
The purpose of this research is to understand different aspects of fourth and fifth graders' motivation towards reading. Your child is being recruited to participate in this study. Your child's assistance in filling out the study questionnaire will help me to better understand how fourth and fifth grade students become motivated to read. I will be using the information in my dissertation which is the final requirement at the University of Arizona for my doctorate in education.

SELECTION CRITERIA:
Your child was invited to participate because he or she is in the fourth or fifth grade. If you consent to allowing your child to participate, your child will be told about the study and he or she will be asked to decide whether they would like to participate. Your child will have the opportunity to say no, and will be told that there are no negative consequences to not participating. If your child agrees to participate, he or she will be asked to spend 20 minutes filling out the questionnaire. Approximately 400 students are being asked to fill out a questionnaire about reading motivation.

Your child's teacher will fill out a demographic sheet indicating your child's gender, reading teacher, reading grade, and whether or not your child receives special services. This form will be attached to the questionnaire your child fills out. Your child's name will not appear on this form.

If you do not wish for your child to participate in this study, your child will be asked to silently read a book while those that are participating fill out the questionnaire.

PROCEDURES:

If you agree to allow your child to participate, your child will be asked to do the following:

1. Return this parent consent form in which you indicated it would or would not be okay for your child to participate.

2. Determine if they want to participate in this study and sign a consent form.
3. Put only his or her **first name** and **first initial** of last name on the questionnaire (this information will be used by the teacher to fill out the student summary form - see enclosed forms).
4. Circle the descriptor on each item that best describes them as it pertains to their motivation for reading.
5. Answer all 56 items on the questionnaire.

I am asking the teachers to give them Motivation for Reading Questionnaire during silent reading. This questionnaire will only be given once. During this time each item will be read to the students. The students will be given ample time to decide which descriptor best describes them. All they have to do is circle it. Your child's first name will be used by the teacher to complete the student summary form. The student summary form contains questions pertaining to the student's demographic information such as gender and current reading ability. When all the data have been collected any papers containing your child's name will be shredded. All consent forms will be shredded at the conclusion of this study.

RISKS:
There are no known psychological and or social risks involved in participating in this study. Your child will not be graded nor is your child's grade at risk if they do not participate.

BENEFITS
There are no benefits to participating in this study other than your child having a better understanding of what might motivate him/her to read.

CONFIDENTIALITY
Every measure possible will be taken to ensure confidentiality of all students. Each student will be assigned a number and once the student's responses are recorded, all information will be shredded which contains your child's name. Only the teacher will collect the completed questionnaires. The teacher will not record anything about this study into your child's school records.

You can obtain further information from Laurie Seder, M. A. at (520) 235-3121. If you have questions concerning your child's rights as a research subject, you can call the Human Subjects Committee office at (520) 626-6721.

BEFORE GIVING MY CONSENT BY SIGNING THIS FORM, THE METHODS, INCONVENIENCES, RISKS, AND BENEFITS HAVE BEEN EXPLAINED TO ME AND MY QUESTIONS HAVE BEEN ANSWERED. I MAY ASK QUESTIONS AT ANY TIME AND I AM FREE TO WITHDRAW MY CHILD FROM THE PROJECT AT ANY TIME WITHOUT CAUSING BAD FEELINGS. MY CHILD'S PARTICIPATION IN THIS PROJECT MAY BE ENDED BY THE INVESTIGATOR FOR REASONS THAT WOULD BE EXPLAINED. NEW INFORMATION

DEVELOPED DURING THE COURSE OF THIS STUDY, WHICH MAY AFFECT MY WILLINGNESS FOR MY CHILD TO CONTINUE IN THIS RESEARCH PROJECT WILL BE GIVEN TO ME AS IT BECOMES AVAILABLE. THIS CONSENT FORM WILL BE FILED IN AN AREA DESIGNATED BY THE HUMAN SUBJECTS COMMITTEE WITH ACCESS RESTRICTED TO THE PRINCIPAL INVESTIGATOR, LAURIE SEDER OR AUTHORIZED REPRESENTATIVE OF THE SPECIAL EDUCATION DEPARTMENT. I DO NOT GIVE UP ANY OF MY LEGAL RIGHTS OR THOSE OF MY CHILD BY SIGNING THIS FORM. A COPY OF THIS SIGNED CONSENT FORM WILL BE GIVEN TO ME.

Subject's Signature _____ Date _____

Parent/Legal Guardian _____ Date _____

INVESTIGATOR'S AFFIDAVIT

I hereby certify that to the best of my knowledge the person who is signing this consent form understands clearly the nature, demands, benefits, and risks involved in his/her child's participation and his/her signature is legally valid. A medical problem or language or educational barrier has not precluded this understanding.

Signature of Investigator _____ Date _____

Student Consent Form

Dear Student:

Your mother/father has told me that it was okay for me to ask you to fill out a questionnaire. The questionnaire has 56 items on it; these questions ask you about your feelings about reading. All you would have to do is circle the response that best describes you. Your teacher will read all the items to you and you may ask as many questions as you would like. You will not be graded! You also have the right to say that you do not want to participate. It is up to you whether or not you do this.

It will be greatly appreciated if you do take the time to fill out the questionnaire.

Thank you,

Laurie Seder

Please check one and sign:

☐ I will participate by filling out the questionnaire

☐ I do not want to participate

Student Signature Date

Print Name

APPENDIX C: CATEGORIES AND DIMENSIONS OF THE MRQ

Competency and Efficacy Beliefs Model

Self-Efficacy

3. I know that I will do well in reading next year.
9. I am a good reader.
15. I learn more from reading than most students in the class.
50. In comparison to my other school subjects I am best at reading.

Challenge

2. I like hard, challenging books.
7. I like it when the questions in books make me think.
26. I usually learn difficult things by reading.
44. If a project is interesting, I can read difficult material.
48. If a book is interesting, I don't care how hard it is to read.

Work Avoidance

23. I don't like reading something when the words are too difficult.
27. I don't like vocabulary questions.
28. Complicated stories are no fun to read.
52. I don't like it when there are too many people in the story.

Goals for Reading Model

Curiosity

5. If the teacher discusses something interesting I might read more about it.
8. I read about my hobbies to learn more about them.
13. I read to learn new information about topics that interest me.
16. I like to read about new things.
35. If I am reading about an interesting topic I sometimes lose track of time.
45. I enjoy reading books about people in different countries.

Involvement

10. I read stories about fantasy and make-believe.
24. I make pictures in my mind when I read.
30. I feel like I make friends with people in good books.
33. I like mysteries.
41. I enjoy a long, involved story or fiction book.
46. I read a lot of adventure stories.

Importance

53. It is very important to me to be a good reader.

54. In comparison to other activities I do, it is very important to me to be a good reader.

Recognition
14. My friends sometimes tell me I am a good reader.
17. I like hearing the teacher say I read well.
29. I am happy when someone recognizes my reading.
31. My parents often tell me what a good job I am doing in reading.
36. I like to get compliments for my reading.

Grades
19. I look forward to finding out my reading grade.
37. Grades are a good way to see how well you are doing in reading.
39. I read to improve my grades.
40. My parents ask me about my reading grade.

Competition
12. I like being the only one who knows an answer in something we read.
18. I like being the best at reading.
22. It is important for me to see my name on a list of good readers.
43. I try to get more answers right than my friends.
49. I like to finish my reading before other students.
51. I am willing to work hared to read better than my friends.

Social Purposes of Reading

Social
1. I visit the library often with my family.
11. I often read to my brother or my sister.
20. I sometimes read to my parents.
21. My friends and I like to trade things to read.
34. I talk to my friends about what I am reading.
38. I like to help my friends with their schoolwork in reading.
42. I like to tell my family about what I am reading.

Compliance
4. I do as little schoolwork as possible in reading
6. I read because I have to.
25. I always do my reading work exactly as the teacher wants it.
32. Finishing every reading assignment is very important to me.
47. I always try to finish my reading on time.

Reading Activity
55. Did you read a book for fun in the last week? Yes No
If so, what is the title or the name of the author?

56. How often do you read for fun (circle one)?

Almost never	about once a month	about once a week	almost every day

Note. Numbers in front of the items indicate placement in the MRQ.

APPENDIX D: ITEM-TOTAL CORRELATIONS

The following tables contain item-total correlations (Pearson Correlations) for each of the 11 dimensions of reading motivation identified through on the MRQ (** indicates correlation is significant at the 0.01 level (2-tailed))

Table E.1 Total-Item Correlations for Self-Efficacy

	Self-Efficacy	MRQ3	MRQ9	MRQ15	MRQ50
Self-Efficacy	1.0	0.58**	0.68**	0.69**	0.74**

Table E.2 Total-Item Correlations for Challenge

	Challenge	MRQ2	MRQ7	MRQ26	MRQ44	MRQ48
Challenge	1.0	.73**	.66**	.56**	.71**	.64**

Table E.3 Total-Item Correlations for Work Avoidance

	Work Avoidance	MRQ23	MRQ27	MRQ28	MRQ52
Work Avoidance	1.0	0.69**	0.63**	0.71**	0.58**

Table E.4 Total-Item Correlations for Curiosity

	Curiosity	MRQ5	MRQ8	MRQ13	MRQ16	MRQ35	MRQ45
Curiosity	1.0	0.55**	0.62**	0.63**	0.59**	0.42**	0.68**

Table E.5 Total-Item Correlations for Involvement

	Involvement	MRQ10	MRQ24	MRQ30	MRQ33	MRQ41	MRQ46
Involvement	1.0	0.64**	0.51**	0.61**	0.59**	0.58**	0.62**

Table E.6 Total-Item Correlations for Important

	Important	MRQ53	MRQ54
Important	1.0	0.83**	0.89**

Table E.7 Total-Item Correlations for Recognition

	Recognition	MRQ14	MRQ17	MRQ29	MRQ31	MRQ36
Recognition	1.0	0.71**	0..57**	0.67**	0.67**	0.73**

Table E.8 Total-Item Correlations for Grades

	Grades	MRQ19	MRQ37	MRQ39	MRQ40
Grades	1.0	0.55**	0.60**	0.71**	0.70**

Table E.9 Total-Item Correlations for Competition

	Competition	MRQ12	MRQ18	MRQ22	MRQ43	MRQ49	MRQ51
Competition	1.0	0.59**	0.64**	0.55**	0.74**	0.75**	0.70**

Table E.10 Total-Item Correlations for Social

	Social	MRQ1	MRQ11	MRQ20	MRQ21	MRQ34	MRQ38	MRQ42
Social	1.0	0.41**	0.56**	0.55**	0.60**	0.64**	0.59**	0.64**

Table E.11 Total-Item Correlations for Compliance

	Compliance	MRQ4	MRQ6	MRQ25	MRQ32	MRQ47
Compliance	1.0	0.58**	0.52**	0.50**	0.49**	0.54**

APPENDIX E: CONGRUENCE COEFFICIENTS CALCULATIONS

The following congruence coefficient formulas were used to obtain Coefficient of Congruence estimates (CC; Wrigley & Neuhaus, 1955) and Root Mean Square (RMS; Harmon, 1960)

a. $$CCpq = \frac{\sum_{i=1}^{n} a_{ip} \cdot b_{iq}}{\sqrt{\sum_{i=1}^{n} a_{ip}^2 \cdot \sum_{i=1}^{n} b_{iq}^2}}$$

where a and b refer to the factor loadings, p and q refer to the two factors being compared, and i refers to the variables (1, 2, ..., n) in each factor.

b. $$RMSpq = \sqrt{\frac{\sum_{i=1}^{n} (a_{ip} - b_{iq})^2}{n}}$$

where a and b refer to the factor loadings, p and q refer to the two factors being compared, and i refers to the variables (1, 2, ..., n) on each factor.

REFERENCES

Adelman, H. S., & Taylor, L. (1983). Enhancing motivation for overcoming learning and behavior problems. Journal of Learning Disabilities, 16, 384-392.

Adelman, H. S., & Taylor, L. (1990). Intrinsic motivation and school misbehavior: Some intervention implications. Journal of Learning Disabilities, 23, 541-550.

Allinder, R. M. (2001). Improving fluency in at-risk readers and students with learning disabilities. Remedial and Special Education, 2, 48-54.

Almasi, J. F. (1995). The nature of fourth graders' sociocognitive conflicts in peer-led and teacher-led discussions of literature. Reading Research Quarterly, 30, 314-351.

Almasi, J. F., McKeown, M. G., & Beck, I. L. (1996). The nature of engaged reading in classroom discussions of literature. Journal of Literacy Research, 28, 107-147.

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. Journal of Educational Psychology, 84, 261-271.

Anderman, E. M., & Maehr, M. L. (1994). Motivation and schooling in the middle grades. Review of Educational Research, 64, 287-309.

Anderson, R. C., Wilson, P. T., & Fielding, L. G. (1988). Growth in reading and how children spend their time outside of school. Reading Research Quarterly, 23, 285-303.

Badian, N. A. (1999). Reading disability defined as a discrepancy between listening and reading comprehension. Journal of Learning Disabilities, 32, 138 – 148.

Baker, L. (1982). An evaluation of the role of metacognitive deficits in learning disabilities. Topics in Learning and Learning Disabilities, 27-35.

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 - 477.

Baker, L., Afflerbach, P., & Reinking, D. (Eds.) (1996). Developing engaged readers in school and home communities. Mahwah, N.J.: Lawrence Erlbaum Associates, Publishers.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84, 191-215.

Bandura, A. (1982). Self-efficacy mechanisms in human agency. American Psychologist, 37, 122-147.

Bandura, A. (1986). The explanatory and predictive scope of self-efficacy theory. Journal of Social and clinical Psychology Special Issue: Self-efficacy theory in contemporary psychology, 4, 359-373.

Bandura, A. (1997). Self-efficacy. Harvard Mental Health Letter, 13, 4-6.

Benninga, J. S., Tracz, S. M., Sparks, R. K., jr., Solomon, D., Battistichk, V., Delucci, K. L., Sandoval, R., & Stanley, B. (1991). Effects of two contrasting school task and incentive structures on children's social development. The Elementary School Journal, 92, 149-167.

Bloome, D., & Green, J. L. (1992). Educational contexts of literacy. Annual Review of Applied Linguistics, 12, 49-70.

Bollen, K. A. (1989). Structural equations with latent variables. New York, NY: John Wiley & Sons.

Borkowski, J. G. (1992). Metacognitive theory: A framework for teaching literacy, writing, and math skills. Journal of Learning Disabilities, 25, 253-257.

Borkowski, J. G., & Muthukrishna, N. (1992). Moving cognition into the classroom: "Working models" and effective strategy teaching. In M. Pressley, K. R. Harris, & J. T. Guthrie (Eds.), Promoting academic competence and literacy in school (pp. 477-501). San Diego: Academic Press.

Borkowski, J., Carr, M., Rellinger, E., & Pressley, M. (1990). Self-regulated cognition: Interdependence of metacognition, attributions and self-esteem. In B. F. Jones & L. Idol (Eds.), Dimensions of thinking and cognitive instruction (pp. 53-92). Hillsdalem NJ: Erlbaum.

Bos, C. S., & Filip, D. (1984). Comprehension monitoring in learning disabled and average students. Journal of Learning Disabilities, 17, 229-233.

Bos, C. S., & Vaughn, S. (1994). Strategies for teaching students with learning and behavior problems. Boston:Allyn & Bacon.

Brophy, J. (1983). Conceptualizing student motivation. Educational Psychologist, 18, 200-215.

Brown, A. L., & Smiley, S. S. (1977). Rating the importance of structural units of prose passages: A problem of metacognitive development. Child Development, 48, 1-8.

Brown, A. L., Bransford, J. D., Campione, J. C., & Ferrara, R. A. (1983). Learning remembering and understanding. In J. Flavell & E. Markman (Eds.), Handbook of child psychology: Vol. 3. Cognitive Development (pp. 77-166). New York: Wiley.

Bryan, T. H. (1986). Personality and situational factors in learning disabilities. In G. T. Pavlidis & D. F. Fisher (Eds.), Dyslexia: Its neuropsychology and treatment (pp. 215-230). Chichester, England: Wiley.

Butler, D. L., & Winne, P. H. (1995). Feedback and self-regulated learning. A theoretical synthesis. Review of Educational Research, 65, 245-281.

Cambourne, B. (1995). Toward an educationally relevant theory of literacy learning: Twenty years of inquiry. The Reading Teacher, 49. 182-192.

Campbell, J. R., Voelkl, K. E., & Donahue, P. L. (1997). NAEP 1996 trends in academic progress (NCES Publication No. 97-985). Washington, DC: U.S. Department of Education.

Chan, L. K. S. (1994). Relationship of motivation, strategic learning, and reading achievement in grades 5,7, and 9. Journal of Experimental Education, 62, 319-339.

Chapman, J. W. (1988). Learning disabled children's self-concepts. Review of Educational Research, 58, 347-371.

Chapman, J. W. (1988a). Cognitive-motivational characteristics and academic achievement of learning disabled children: A longitudinal study. Journal of Educational Psychology, 80, 357-365.

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, 154 - 167.

Csikszentmihalyi, M. (1990). Flow-the psychology of optimal experience. New York: Harper & Row.

Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. New York: Plenum Press.

Deci, E. L., & Ryan, R. M. (1992). The initiation and regulation of intrinsically motivated learning and achiemvent. In A. K. Boggiano & T. S. Pittman (Eds.), Achievement and motivation: A social developmental perspective (pp. 3-36). Toronto: Cambridge University Press.

Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation in education: The self-determination perspective. The Educational Psychologist, 26, 325-346.

Dev, P. C. (1997). Intrinsic motivation and academic achievement. Remedial and Special Education, 18, 12-19.

Dweck, C. S. (1986). Motivational processes affecting learning. American Psychologist, 41, 1040-1048.

Dweck, C. S. (1991). Self-theories and goals. Their role in motivation, personality and development. In R. Dienstbier (Ed.), Nebraska Symposium on Motivation, Vol. 38. Perspectives on motivation (pp. 199-236). Lincoln: University of Nebraska Press.

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. Psychological Review, 95, 256-273.

Dweck, S. S., & Leggett, E. L. (1983). Achievement motivation. In P. H. Mussen (Ed.), Handbook of child psychology (pp. 643-691). New York: Wiley.

Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), Handbook of child psychology (Vol. IV, 5th ed., pp. 1017-1095). New York: Wiley.

Fincham, F. & Cain, K. (1986). Learned helplessness in humans: A developmental analysis. Developmental Review, 6, 301-303.

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. American Psychologist, 34, 906-911.

Fornoll, C. (1983). Issues in the application of covariance structure analysis: A comment. Journal of Consumer Research, 9, 443-448.

Fulk, B. M., & Brigham, F. J. (1998). Motivation and self-regulation: A comparison of students with learning and behavior problems. Remedial & Special Education, 19(5), 300-309.

Gambrell, L. B., Palmer, B. M., Codling, R. M., & Mazzoni, S. A. (1996). Assessing motivation to read. The Reading Teacher, 49, 2-19.

Guthrie, J. T., & Alvermann, D. (Eds.). (1999). Engagement in reading: Processes, practices, and policy implications. New York: Teachers College Press.

Guthrie, J. T., & Wigfield, A. (1997). Reading engagement: A rationale for theory and teaching. In J. T. Guthrie, & A. Wigfield (Eds.), Reading engagement: Motivating

readers through integrated instruction (pp. 1-12). Newark, DE: International Reading Association.

Guthrie, J. T., & Wigfield, A. (2000). Engagement and motivation in reading. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), Handbook of reading research (Vol. III).Mahwah, NJ: Erlbaum.

Guthrie, J. T., McGough, K., Bennett, L., & Rice, M. E. (1996). Concept-oriented reading instruction: An integrated curriculum to develop motivations and strategies for reading. In L. Baker, P. Afflerbach, & D. Reinking (Eds.). Developing Engaged Readers in School and Home Communities (pp. 165 - 190). Mahwah, NJ: Erlbaum Associates, Publishers.

Guthrie, J. T., Schafer, W. D., Want, Y. Y., & Afflerbach, P. (1995). Relationships of instruction to amount of reading: An exploration of social, cognitive, and instructional connections. Reading Research Quarterly, 30, 8-25.

Guthrie, J. T., Wigfield, A., Metsala, J. L., & Cox, K. E. (1999). Motivational and cognitive predictors of text comprehension and reading amount. Scientific Studies of Reading, 3(3), 231-256.

Harman. H. H. (1960). Modern factor analysis. Chicago: University of Chicago Press.

Harter, S. (1992). The relationship between perceived competence, affect, and motivational orientation within the classroom: Process and patterns of change. In K. A. Boggiano & T. Pitman (Eds.), Achievement and motivation: A social-development perspective (pp. 77-114). New York: Cambridge University Press.

Harter, S., Whitsell, N. R., & Junkin, L. J. (1998). Similarities and differences in domain-specific and global self-evaluations of learning-disabled, behaviorally disordered, and normally achieving adolescents. American Educational Research Journal, 35, 653-80.

Johnson, L., & Graham, S. (1997). The effects of goal setting and self-instruction on learning a reading comprehension strategy: A study of students with learning disabilities. Journal of Learning Disabilities, 30, 80-91.

Kim, C. W., & Mueller, C. W. (1978). Factor analysis: Statistical methods and practical issues. Newbury Park, CA: SAGE.

Kim, C. W., & Mueller, C. W. (1978). Introduction to factor analysis. Newbury Park, CA: SAGE.

Kim, J. O.. (1975). Multivariate analysis of ordinal variables. American Journal of Sociology, 81, 261-298.

Lawley, D. N., & Maxwell, A. E. (1971). Factor analysis as a statistical method. London: Butterworth and Co.

Lehtinen, E., Vauras, M., Salonen, P., Olkinuora, E., & Kinnunen, R. (1995). Long-term development of learning activity: motivational, cognitive, and social interaction. Educational Psychology, 19, 199-216.

Licht, B. G., & Kistner, J. A. (1986). Motivational problems of learning disabled children: Individual differences and their implications for treatment. In J. K. Torgesen & B. W. L. Long (Eds.), Psychological and educational perspectives on learning disabilities (pp. 225 – 255). Orlando: Academic Press.

Long, J. S. (1983). Confirmatory factor analysis. Newbury Park, CA: SAGE.

Maehr, M. L. 91976). Continuing motivation: An analysis of a seldom considered educational outcome. Review of Educational Research, 46, 443-462. 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 - 477.

Marsh II, G. E. (2000). WWW.bamaed.ua.edu/ail601/student_evaluation.html.

Marsh, H. W., Balla, J. R., & McDonald, R. P. (1988). Goodness-of-fit indices in confirmatory factor analysis: The effect of sample size. Psychological Bulletin, 103, 391-410.

Marsh, H. W., Smith, I.D., & Barnes, J. (1985). Multidimensional self-concepts: Relations with sex and academic self-concept. Journal of Educational Psychology, 77, 581-596.

Marshall, H. H. (1992). Seeing, redefining, and supporting student learning. In H.H. Marshall (ed.), Redefining student learning: roots of educational change (pp. 1-32). Norwood, NJ: Ablex.

Mastropieri, M.A., & Scruggs, T. E. (1994). Effective instruction in special education (2nd ed.). Austin, TX: PRO-ED.

McCombs, B. (1991). Motivation and lifelong learning. Educational Psychologist, 26, 117-127.

McCombs, B. (1996). Alternative perspectives for motivation. In L. Baker, P. Afflerbach, & D. Reinking (Eds.), Developing engaged readers in school and home communities (pp. 67-87). Mahwah, NJ: Erlbaum.

McKenna, M. C., Kear, D. J., & Ellsworth, R. A. (1995). Children's attitudes toward reading: A national survey. Reading Research Quarterly, 30, 934-956.

Meece, J. L. (1991). The classroom context and student motivational goals. In M. Maehr & P. Pintrich (Eds.), Advances in motivation and achievement (Vol. 7, pp. 261-285). Greenwich, CT: JAI Press.

Meece, J. L. (1994). The role of motivation in self-regulated learning. In D. H. Schunk, & B. J. Zimmerman (Eds.), Self-regulation of learning and performance: Issues and educational applications (pp. 25-44). Hillsdale, NJ: Erlbaum.

Meece, J. L., Wigfield, A., & Eccles, J. S. (1990). Predictors of math anxiety and its consequences for young adolescents' course enrollment intentions and performances in mathematics. Journal of Educational Psychology, 82, 60-70.

Meltzer, L, Roditi, B., Houser, Jr., R. F., & Pearlman, M. (1998). Perceptions of academic strategies and competence in students with learning disabilities. Journal of Learning Disabilities, 3, 437-451.

Miller, R. B., Behrens, J. T., Greene, B.A., & Newman, D. (1993). Goals and perceived ability: Impact on student valuing, self-regulation and persistence. Contemporary Educational Psychology, 18, 2-14.

Morrow, L. M. (1996). Motivating reading and writing in diverse classrooms (NCTE Research Rep. No. 28). Urbana, IL: National Council of Teachers of English.

Newby, T. J. (1991). Classroom motivation: Strategies of first-year teachers. Journal of Educational Psychology, 83, 195-200.

Nicholls, J. G. (1979). Quality and equality in intellectual development: The role of motivation in education. American Psychologist, 34, 1071-1084.

Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. Psychological Review, 91, 328-346.

Nicholls, J. G. (1989). The competitive ethos and democratic education. Cambridge, MA: Havard University Press.

Nicholls, J. G., Cheung, P., Laurer, J., & Pastashnick, M. (1989). Individual differences in academic motivation: Perceived ability, goals, beliefs, and values. Learning and Individual differences, 1, 63-84.

Oldfather, P., & Wigfield, A. (1996). Children's motivations for literacy learning. In L. Baker, P. Afflerbach, & D. Reinking (Eds.). Developing Engaged Readers in School and Home Communities (pp. 89 - 113). Mahwah, NJ: Erlbaum.

Paris, S. G., & Winograd, P. (1990). Promoting metacognition and motivation of exceptional children. Remedial and Special Education, 11, 7 – 15.

Paris, S. G., Lipson, M. Y., & Wixson, K (1983). Becoming a strategic reader. Contemporary Educational Psychology, 8, 293-316.

Pintrich, P. R. (1988). A process-oriented view of student motivation and cognition. In J. S. Stark & L. Mets (Eds.), Improving teaching and learning through research. New directions for institutional research, 57 (pp. 55-70). San Francisco: Jossey-Bass.

Pintrich, P. R. (1989). The dynamic interplay of student motivation and cognition in the college classroom, In C, Ames & M, Maehr (Eds.), Advances in motivation and achievement: Vol. 6. Motivation enhancing environments (pp. 117-160). Greenwich, CT: JAI Press.

Pintrich, P. R., & De Groot, E. (1990). Motivational and self-regulated learning components of classroom academic performance. Journal of Educational Psychology, 82, 33-40.

Pintrich, P. R., & Schrauben, B. (1992). Students' motivational beliefs and their cognitive engagement in academic tasks. In D. Schunk, & J. Meece (Eds.), Student perceptions: Causes and consequences. Hillsdale, NJ: Erlbaum.

Pintrich, P. R., & Schrauben, B. (1992). Students' motivational beliefs and their cognitive engagement in the classroom academic tasks. In D. H. Schunk & J. L. Meese (Eds.), Student perceptions in the classroom (pp. 149-184).

Pintrich, P. R., & Schunk, D. H. (1996). Motivation in education: Theory, research, and applications. Englewood Cliffs, NJ: Prentice Hall.

The Psychological Corporation. (1992). Stanford Achievement Test Series, Ninth Edition. San Antonio, TX: Author.

Rogers, H., & Saklofske, D. H. (1985). Self-concepts, locus of control and performance expectations of learning disabled children. Journal of Learning Disabilities, 18, 273-278.

Rueda, R., & Dembo, M. H. (1995). Motivational processes in learning: A comparative analysis of cognitive and sociocultural frameworks. Advances in Motivation and Achievement, 9, 255-289.

Rueda, R., & Mehan, H. (1986). Metacognition and passing: Strategic interactions in the lives of students with learning disabilities. Anthropology & Education Quarterly, 17, 145-165.

Schunk, D. H. (1989). Self-efficacy and cognitive achievement: Implications for students with learning problems Journal of Learning Disabilities, 22, 14- 22.

Schunk, D. H. (1990). Introduction to the special section on motivation and efficacy. Journal of Educational Psychology, 82, 3-6.

Schunk, D. H., & Meece, J. L.(1992). Student perceptions in the classroom. Hillsdale, NJ: Erlbaum.

Schunk, D. H., & Rice, J. M. (1993). Strategy fading and progress feedback: Effects on self-efficacy and comprehension among students receiving remedial reading services. The Journal of Special Education, 27, 257-276.

Schunk, D. H., & Zimmerman, B. J. (1997). Developing self-efficacious readers and writers: The role of social and self-regulatory processes. In J. T. Guthrie & A. Wigfield (Eds.), Reading engagement: Motivating readers through integrated instruction (pp. 34-50). Newark, DE: International Reading Association.

Sinclair, M. F., Christenson, S. L., Evelo, D. L., & Hurley, C. M. (1998). Dropout prevention for youth with disabilities: Efficacy of a sustained school engagement procedure. Exceptional Children, 65, 7-21.

Sivan, E. (1986). Motivation in social constructivist theory. Educational Psychologist, 21(3), 209-233.

Slavin, R. E. (1996). Research on cooperative learning and achievement: What we know, what we need to know. Contemporary Educational Psychology, 21, 43-69.

Smith, C.R. (1994). Learning disabilities: The interaction of learner, task, and setting (3rd ed.). Boston: Allyn & Bacon.

Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. Reading Research Quarterly, 21, 360-407.

Stanovich, K. E. (1993). The construct validity of discrepancy definitions of reading disability. In G. R. Lyon, D. B., Gray, J. F., Kavanagh, & N. A. Krasnegn (Eds.), Better understanding learning disabilities: New views from research and their implications for education and public policies(pp. 273-307). Baltimore: Paulh Brooks

Stanovich, K. E., & Cunningham, A. E. (1991). Studying the consequences of literacy within a literate society: The cognitive correlates of print exposure. Memory & Cognition, 20(1), 51-68.

Stevens, S.S. (1946). On the theory of scales of measurement. Science, 103, 677-680.

Stipek, D. J. (1984). Young children's performance expectations. Logical analysis of wishful thinking? In J. G. Nicholls (Ed.), Advances in motivation and achievement: Vol. 3. The development of achievement motivational (pp. 33-56). Greenwich, CT: JAI Press.

Stipek, D. J., & Daniels, D. H. (1988). Declining perceptions of competence: a consequence of changes in the child or in the educational environment? Journal of Educational Psychology, 80, 352-356.

Swanson, P.N., & De La Paz, S. (1998). Teaching effective comprehension strategies to students with learning and reading disabilities: Intervention in School and Clinic, 33, 209-218.

Thorkildsen, T., & Nicholls, J. G. (1998). Fifth graders' achievement orientations and beliefs: Individual and classroom differences. Journal of Educational Psychology, 90, 179-202.

Torgesen, J. K. (1977). The role of nonspecific factors in the task performance of learning disabled children: A theoretical assessment. Journal of Learning Disabilities, 10, 27-34.

Vaidya, S.R. (1999). Metacognitive learning strategies for students with learning disabilities. Education, 120, 186-190.

Wade, S., Buxton, W., & Kelly, M. (1993, April). What text characteristics create interest for readers. Paper presented at the annual meeting of the American Educational Research Association, Atlanta GA.

Webb, N.M. & Palincsar, A. S. (1996). Group processes in the classroom. In D. C. Berliner & R.C. Calfee (Eds.), Handbook of educational psychology (pp.841-873). New York: MacMillan.

Wechsler, D. (1991). Wechsler intelligence scale for children (3rd ed.). San Antonio, TX: Psychological Corp.

Weiner, B. (1979). A theory of motivation for some classroom experiences. Journal of Educational Psychology, 71, 3 – 25.

Weiner, B. (1986). An attributional theory of motivation and emotion. New York: Springer-Verlag.

Wentzel, K. R. (1996). Social and academic motivation in middle school: Concurrent and long-term relations to academic effort. Journal of Early Adolescence, 16, 390-406.

Wertsch, J. V. (1991). Voices of the mind: A socio-cultural approach to mediated action. Cambridge, MA: Harvard University Press.

Wigfield, A. (1997). Children's motivation for reading and reading engagement. In J. T. Guthrie & A. Wigfield (Eds.), Reading engagement: Motivating readers through integrated instruction (pp. 14-33). Newark, DE: International Reading Association.

Wigfield, A., & Eccles, J. S. (1992). The development of achievement task values: A theoretical analysis. Developmental Review, 12, 265-310.

Wigfield, A., & Guthrie, J. T. (1995). Dimensions of children's motivations for reading: An initial study. (Reading Research Rep. No. 34). Athens, GA: National Reading Research Center.

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, 420-432.

Wigfield, A., Eccles, J. S., & Rodriguez, D. (1998). The development of children's motivation in school contexts. Review of Research in Education, 23, 73-118.

Wigfield, A., Eccles, J., Mac Iver, D., Reuman, D., & Midgley, C. (1991). Transitions at early adolescence: Changes in children's domain-specific self-perceptions and general self-esteem across the transition to junior high school. Developmental Psychology, 27, 552-565.

Winograd, P. N., & Johnston, P. H. (1980). Passive failure in reading. Journal of Reading Behavior, 17, 279-301.

Wong, B. Y. L. (1979). Increasing retention of main ideas through questioning strategies. Learning Disabilities Quarterly, 72, 32-38.

Wong, B. Y. L. (1987). Metacognition and special education: A review of a view. The Journal of Special Education, 20 (1), 9-29.

Wong, B. Y. L., & Jones, W. (1982). Increasing metacomprehension in learning disabled and normally achieving students through self-questioning training. Learning Disability Quarterly, 5, 229-240.

Zimmerman, B. J. (1989). A social cognitive view of self-regulated learning. Journal of Educational Psychology, 81, 329-339.

Zimmerman, B. J., Bandura, A., & Martinez-Pons, M.(1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. American Educational Research Journal, 29, 663-676.