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A Reading Motivation Intervention for Students with Learning Disabilities, Students with ADHD, and Their Nondisabled Peers

Alanna M. Lienig
Bethel University

A Reading Motivation Intervention for Students with Learning Disabilities, Students with ADHD, and Their Nondisabled Peers

Alanna Melissa Lienig

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Approved By:

Katie Bonawitz, Ed.D.

Dr. Tracy Reimer, Ph.D.

Dr. Mary Lindell, Ph.D.

Abstract

Motivation research and its effect on reading has been limited for students with disabilities. In the present study a combined motivational intervention (intrinsic standards, positive label, and extrinsic standards) was used with 48 second and third grade students in a randomized pretest posttest control group design with three population groups (ADHD, Learning Disabled, and Nondisabled) and two conditions (reading comprehension and reading fluency). The intervention condition followed the pretest. The intervention used a verbal 3 minute motivational script containing a positive label (e.g. "clever") associated with a specific reading behavior (e.g. answers questions) accompanied by a challenge to perform better on the posttest and better than another. Pretest reading differences were controlled for and no significant differences were found between students in the control group and the intervention group for any of the three groups.

Contents

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CHAPTER 1: INTRODUCTION

Background

In the United States, there is a large population of students who fall under the Individuals with Disabilities Education Act (IDEA). This study will focus on two mild disabilities, (Rotatori, Obiakor, & Bakken, 2013) a learning disability in reading and Attention Deficit Hyperactivity Disorder (ADHD). This study will explore how a motivation intervention affects their reading skills.

There are approximately five-percent of children in the United States with Attention Deficit Hyperactivity Disorder (ADHD) (American Psychiatric Association, 2013). This is one of the most prevalent childhood disorders, and can continue on to adulthood (National Institute of Mental Health, n.d.). The percentage of children who receive pharmaceutical treatment for ADHD is lower than the percentage of children who have ADHD (American Psychiatric Association, 2013). Whether or not children are taking medication, educators have a need to create optimal learning environments for students with ADHD. Students with ADHD may qualify for special education under the Minnesota category of Other Health Disability (OHD) or be eligible for a 504 plan.

In Minnesota, specific learning disabilities make up the largest disability group (Minnesota Department of Education, 2000). One third of students receiving special education have a learning disability (U.S. Department of Education, 2010). High quality specialized instruction is expected for students with learning and other health disabilities,

therefore there is a need for interventions and teaching strategies tailored to an individual and his or her abilities (Minnesota Department of Education, 2013).

Introduction to the Problem

Reading is essential for a child's success (Dieterich et al., 2006). According to What Works Clearinghouse, the United States Department of Education's guide to the best available evidence and expertise on what works in education, "Students who read with understanding at an early age gain access to a broader range of texts, knowledge, and educational opportunities, making early reading comprehension instruction particularly critical" (Knechtel, Sama-Miller, Sattar, & Wissel, 2010, p. 5)

In their study, Connor, Alberto, Compton and O'Connor (2014) found that, "Reading difficulties and disabilities present serious and potentially lifelong challenges. Children who do not read well are more likely to be retained a grade in school, drop out of high school, become a teen parent, or enter the juvenile justice system" (p. 1). Students with a learning disability are less likely to graduate from high school (Laird, Cataldi, KewalRamani, & Chapman, 2008) and less likely to attend a postsecondary institution, (Wagner, Newman, Cameto, Garza, & Levine, 2005) making them ineligible for high quality jobs (National Joint Committee on Learning Disabilities, 2008). The majority of children with diagnosed ADHD and inattention have academic deficits and school-related problems (American Psychiatric Association, 2000). Students with ADHD and inattention use more special education and remedial services, are retained more, drop

out more, have more absences, have lower standardized testing achievement, and less education than the population (Barkley, Fischer, Smallish, &, 2006; Frazier et al., 2007).

Improved reading outcomes benefit the individuals as well as society (Reynolds et al., 2002). A higher number of inmates have a learning disability than people living in households (Greenberg, Dunleavy, & Kutner, 2007). Harlow (2003) found that 66% of inmates who have a learning disability did not complete high school or its equivalent.

Reading is crucial for children, yet those with a learning disability have difficulty reading at grade level. According to the National Joint Committee on Learning Disabilities (2009), "significant numbers of adolescents in the United States do not read and/or write at levels needed to meet the demands of the 21st century" (p.1). There is a gap in reading ability between students with a learning disability and their nondisabled peers. Kirk (2002) found in his documentary that approximately 85% of children diagnosed with a reading difficulty have a primary problem with reading and language skills. The National Joint Committee on Leaming Disabilities (2008) found that 20.8% of students with a learning disability read at least five grade levels below their peers. Data collected regarding all students with learning disabilities shows that there is an average gap of 3.4 grade levels between their nondisabled peers (National Joint Committee on Learning Disabilities, 2008).

There is a need to use evidence-based practices that will improve reading achievement for students with learning disabilities (Connor, Alberto, Compton & O'Connor, 2014). To find a solution to this problem, nationally recognized experts were

contracted by the The Institute of Education Sciences (IES) at the U.S. Department of Education to develop a report that describes what has been learned regarding the improvement of reading outcomes for children with or at risk for learning disabilities in reading (Connor, Alberto, Compton & O'Connor, 2014). This report intended to identify ways to improve reading outcomes for students with or at risk for learning disabilities. There are other governmental ambitions to improve reading for all students. The Individuals with Disabilities Education Act (IDEA) (2004) mandates that educators and parents have the necessary tools they need to improve educational results for students with disabilities (United States Department of Education, 2007). The Individuals with Disabilities Education Act requires evidence-based interventions in the general education classroom for students who are struggling. These interventions are a piece of response to intervention (RTI).

There are unique reading challenges for students with learning disabilities. Researchers (Lee, 2010; Melekoglu & Wilkerson, 2013) concluded that struggling readers with and without disabilities have lower motivation to read than their peers. Given current evidence-based classroom reading practices, a study (Melekoglu & Wilkerson, 2013) found students with reading difficulty have actually lost motivation for reading while their peers increase motivation over time.

One such evidence-based practice that improves student achievement is a motivation intervention (Zentall & Lee, 2012). Motivation plays a central role in literacy development (Marinak, 2013, p. 39) and motivation is critical in education as well as real

life (Zhao, 2009). Poor reading motivation can be a defining characteristic of reading failure (Lepola, Poskiparta, Laakkonen, & Niemi, 2005; Sideridis, Morgan, Botsas, Padeliadu, & Fuchs, 2006).

While students with ADHD do not have the same struggles as students with learning disabilities, there are unique reading challenges for students with ADHD. Studies (Cherkes-Julkowski & Stolzenberg, 1991; Lorch, Milich, & Sanchez, 1998) have found that students with ADHD can have reading comprehension difficulties when they must recall causal connections (A leads to B) and when reading passages are long. Students with ADHD have reading comprehension difficulties when there are interruptions in the story sequence such as excessive description and interrupted story coherence (Zentall, Cassady, & Javorsky, 2001). Recent research (Miller et al., 2013) found that children with ADHD have difficulty building a coherent mental representation when reading. McInnes, Humphries, Hogg-Johnson, and Tannock (2003) found that students with ADHD were poorer than their nondisabled peers at comprehending inferences and monitoring comprehension of instructions. Students with ADHD were also found to have significantly poorer verbal working memory, spatial span, and spatial working memory than their peers (McInnes, Humphries, Hogg-Johnson, & Tannock, 2003).

Although students with ADHD experience multiple deficits when compared with nondisabled peers, they also share a few of the positive traits such as verbal span and the

ability to comprehend factual information from spoken passages (McInnes, Humphries, Hogg-Johnson, & Tannock, 2003).

Reading failure is accompanied by motivational deficits for students with a learning disability, with or without ADHD (Lee, 2010). This can be offset by positive performance feedback with a reasonable challenge to perform better than before (internal standards) and better than others (external standards), combined with antecedent priming that activates positive self-perceptions (Zentall & Lee, 2012).

Motivation has been found to increase reading achievement (Baker & Wigfield 1999; Chapman & Timmer 1995). Researchers (Norgate & Warhurst, 2012; Zentall & Belke, 2012) have called for interventions that increase motivation, especially when students with learning disabilities have been found to have lower motivation levels than their peers.

Previous research (Marinak, 2013; Miller & Meece, 1997; Worthy, Paterson, Salas, Prater, & Turner, 2002) have established motivational interventions, but outcomes for learners with mild disabilities have been limited (Zentall & Lee, 2012). In their study, Melekoglu and Wilkerson (2013) stated that there is a need for additional research exploring struggling readers' motivation. Zentall and Lee (2012) chose to study both learning disabilities and ADHD due to prevalence in school-aged children. Zentall and Lee (2012) filled a gap in motivation intervention research with students in fourth and fifth grade with a learning disability or Attention Deficit Hyperactive Disorder (ADHD). Zentall and Lee's (2012) study had a very small sample population of second and third

grade participants, resulting in a call for a replication of the study including younger students. This research will provide a practical, empirically based intervention for educators in a first-tier intervention approach for students at risk for a learning disability in reading with and without ADHD. In addition, the current research study has potential to validate Zental and Lee's (2012) findings for younger students. This study will discuss the differential outcomes of a motivation intervention for students covered and not covered by IDEA.

Statement of the Problem

Motivation has been the focus of psychology for over a century and is an essential element of any sound model of human performance (Pindel, 2011; Steers, Mowday, & Shapiro, 2004). Not only is motivation a critical piece in academics as a critical ingredient in the learning process, (Hidi & Harackiewicz, 2000) but it is critical in healthcare systems (Franco, Bennett, & Kanfer, 2002), and personal health and wellbeing (Fisher, Fisher, & Harman, 2003). Cerasoli, Nicklin, and Ford (2014) stated that motivation may be the number one problem facing organizations today.

Lee and Zentall (2012) found that students with learning disabilities and students with ADHD have lower reading motivation than their nondisabled peers. Students with a learning disability and students with ADHD have lower academic motivation over time (Volpe et al., 2006; Zentall & Beike, in press). Given the organic gap in motivation for students with learning disabilities and their peers, it is important for educators to work to increase reading motivation.

Due to the lack of studies on motivation interventions, both researchers (Brophy, 2008; Guthrie, 2010; Zentall & Lee, 2012) and organizations (Education Alliance, 2010) have called for research exploring strategies to improve reading motivation. Past research has failed to recognize motivation for its potential to produce instructional gains, especially for students with mild disabilities (Zentall & Lee, 2012). Educators need to use the most current methods for all students, including those who have mild disabilities such as a learning disability or ADHD. Since past motivational intervention research is not generalizable for all age groups, there is a gap in the research (Zentall & Lee, 2012; Melekoglu, 2011). Cerasoli, Nicklin, and Ford (2014) have also noted a gap in research, specifically the impact of incentives and intrinsic motivation on performance.

The current study examined the impact of a motivational intervention on reading achievement for students with disabilities and their peers. Additional research is needed to determine how feedback effects understanding and achievement (Butler, Godbole, & Marsh 2013; De Naeghel, Van Keer, Vansteenkiste & Rosseel, 2012; Hellrung & Hartig, 2013; Norgate & Warhurst, 2012). Skipper and Douglas (2012) call for additional research on the effects of feedback in education. There is not an abundance of research on motivational interventions for students and with disabilities (Norgate & Warhurst, 2012; Zentall & Lee, 2012). There has been a call for additional research to emphasize the importance of research exploring the differences between high and low achievers in reading (Logan, Medford & Hughes, 2012). Judge (2011) suggests that future

motivational research focus on the individualized variations of learners, which was discussed in the present study by separating students and their unique abilities.

Statement of Purpose

The purpose of this quantitative study was to determine the effect of a combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) for learners with ADHD, a learning disability, both ADHD and a learning disability, and their nondisabled peers.

Studies (Goodman et al, 2011; McGeown, Norgate & Warhurst, 2012; Naeghel, Van Keer, Vansteenkiste & Rosseel, 2012) have found that intrinsic motivation improves reading achievement. In their reading motivation study, De Naeghel, Van Keer, Vansteenkiste and Rosseel (2012) wrote that there is a need for examining the dimensions of reading motivation.

There is a need for research linked to increased reading motivation (El, Tillema & van Koppen, 2012; Margolis & McCabe, 2006; Zentall & Morris, 2010). There is not an abundance of research on motivational interventions for students with disabilities (Norgate & Warhurst, 2012; Zentall & Lee, 2012). Additional research has been called for to fill this gap in research for learners with disabilities (Butler et al., 2013; Hellrung & Hartig, 2013; Norgate & Warhurst, 2012).

Researchers have called for additional research to examine the differences between high and low achievers in reading (Logan, Medford & Hughes, 2012). To add to a gap in research for students with reading difficulty, Zentall and Lee (2012) used a

combined motivation intervention to measure reading comprehension gains for students with learning disabilities and ADHD (Norgate & Warhurst, 2012; Zentall & Lee, 2012). The study included 80 second- to fifth- grade participants. There were smaller numbers in second (7) and third (7) grade, with larger numbers in fourth (27) and fifth (39) grade, leading the researchers to call for a replication of the study with second and third grade students to increase generalizability of the findings.

Judge (2011) suggests that future motivational research focus on the individualized variations of learners. The present study will address this variation by separating students and their unique differences (ADHD, learning disability in reading, ADHD and a learning disability in reading, and no disability).

The current study will examine the impact of a motivational intervention on reading achievement, for three groups of students. The types of students were (a) students with ADHD, (b) students with a learning disability in reading, (c) and their nondisabled peers. Clearer results are available when these two disabilities are separated, unless a student has both ADHD and a learning disability because students with ADHD have different characteristics than students with learning disabilities (Lee, 2010).

Research Question

1. What, if any, difference exists in reading achievement between groups (students with a learning disability in reading, ADHD, and no disability) when provided combined motivation intervention (intrinsic standards, positive label, extrinsic standards)?

Hypotheses

H_{1o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have no gains in reading comprehension for group a (ADHD) (Zentall & Lee, 2012).

H_{1a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading comprehension for group a (ADHD) (Zentall & Lee, 2012).

H_{2o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have no gain in reading fluency for group a (ADHD) (Zentall & Lee, 2012).

H_{2a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading fluency for group a (ADHD) (Zentall & Lee, 2012).

H_{3o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading comprehension for group b (learning disability in reading).

H_{3a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will improve reading comprehension for group b (learning disability in reading).

H_{4o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading fluency for group b (learning disability in reading).

H_{4a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will significantly improve reading fluency for group b (learning disability in reading).

H_{5o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not result in gains in reading comprehension for group c (nondisabled) (Zentall & Lee, 2012).

H_{5a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading comprehension for group c (nondisabled) (Zentall & Lee, 2012).

H_{6o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading fluency for group c (nondisabled) (Zentall & Lee, 2012).

H_{6a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading fluency for group c (nondisabled) (Zentall & Lee, 2012).

Significance of the Study

The National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO) (2014) state that reading

achievement is important in the 21st century for both career and college readiness. The four foundational reading standards include key ideas and details, craft and structure, integration of knowledge and ideas, and range of reading level and complexity are considered essential for future success. Many institutions, including the Minnesota Department of Education, emphasize the importance of reading achievement not only for the student, but for society.

Reading achievement is at the forefront of K-12 school efforts. Many states have adopted the common core literacy standards (Council of Chief State School Officers, & National Governors Association Center for Best Practices, 2014). Valencia and Wixson (2013) wrote about successful implementation and cautions of the common core literacy standards. Their article emphasized that the goals of the common core were not likely to be achieved without attention to motivational and strategic aspects of reading instruction. Pressley, Dolezal, Raphael, Mohan, Roehrig and Bogner (2003) found that if teachers focus on motivation, everything else will follow (p. 163). Research studies linking reading and motivation supports have increased (Conradi, Jang, & McKenna, 2013), which has been attributed to the need to meet new common core literacy standards.

Wilhelm (2013) said that motivation is the prerequisite of all learning. Motivation is a cognitive process that stimulates participation, interest, and success in specific learning contexts (Brophy, 2010).

Definition of Terms

Attention Deficit Hyperactivity Disorder (ADHD) has a common definition published by Mayo Clinic (2014) and the National Institute of Mental Health (n.d.), "Attention-deficit/hyperactivity disorder (ADHD) is a chronic condition that affects millions of children and often persists into adulthood. ADHD includes a combination of problems, such as difficulty sustaining attention, hyperactivity and impulsive behavior". For this study, students identified as ADHD (group A) was previously diagnosed by a physician, and may or may not be receiving or not receiving Special Education or 504 benefits.

The terms learning disability, specific learning disability, and learning disorders are used synonymously in this study. For the present study, students identified with a learning disability (group B) in reading includes those students who have been identified as such and are eligible under Minnesota Learning Disability criteria under Minnesota Rules Chapter 3525 to receive special education and related services. Students who have received a diagnosis of learning disorder from a physician, but who are not eligible or who have not been identified under Minnesota Learning Disability criteria are not included in the learning disability group.

The study's definition for learning disability will differ from Zentall and Lee's (2012) definition. Zentall and Lee (2012) used a broad definition, including both students with learning difficulties and identified learning disabilities, based on a discrepancy in standardized academic testing and an intelligence test. Although a learning disability can

be described as a discrepancy between IQ and achievement, Minnesota still uses the discrepancy score in order for a student to meet special education eligibility criteria. Although Minnesota criteria is not based on one test or score and requires input from a variety of sources as stated in federal statutes and rules, the schools used in my study were using the ABC criteria rather than the alternate ABD criteria option (Revised Minnesota Rule 3525.1341, September 2008) . ABD criteria are defined as "Inadequate achievement, disorder in basic psychological processes, discrepancy between intellectual ability and achievement" (Weinberg, No Date, p. 10-10). My study will use ABC criteria because the schools in the sample are not able to use the alternative ABD criteria as defined "Inadequate achievement, disorder in basic psychological processes, data from a system of scientific research-based intervention (SRBI)" because "A system of SRBI must be documented within the TSES plan and fully implemented before teams may use criteria D, see FAQ" (Weinberg, No Date).

Students without a disability (group C) are those students who have not been identified as having a disability under any of the Minnesota criteria for Special Education categories and are not currently receiving any 504 services or accommodations.

Conradi, Jang, and McKenna (2013) recognize the inconsistent use of terminology for motivation, including agency, attitudes, expectancy, extrinsic motivation, goals, interest, motivation, reading motivation, and self-belief. In the present literature review, motivation terms were separated from terms such as self-efficacy, attitudes, and values, as recommended by Conradi, Jang and McKenna (2012). Zentall and Lee's

(2012) definition of motivation was used, defining motivation, "by behavior (e.g., task engagement, performance) that is directed by achievement and social goals," (p. 248). All motivation terms were discussed for their contributions to reading achievement.

Zentall and Lee (2012) used motivation terms throughout their study to describe the three phases of their motivation intervention. Table 1 shows the relationship between the terms for each piece of the intervention.

Terms in the present study	Synonymous terms used in Zentall and Lee's (2012) study
(a) Intrinsic standards	Mastery goals with individual feedback Internal standards Internal goals Intrinsic standards Intrinsic goals
(b) Positive labeling associated with a reading behavior	Specific label Clever Associated with a reading behavior
(c) Extrinsic standards	External standards External goals Extrinsic standard Extrinsic goals

Table 1*: Motivation intervention terms*

Positive labeling is defined as a specific label associated with a reading behavior (Zentall & Lee, 2012). Positive labeling is synonymous to feedback in this study.

Intrinsic standards are defined as "positive feedback about prior reading performance paired with internal standards related to mastery goals" (Zentall & Lee, 2012, p. 253).

Extrinsic standards were defined by Zentall and Lee (2012) as "a challenge to perform better than others" (p. 256). External standards are paired with performance goals.

Response to Intervention (RTI) is defined by The National Center for Learning Disabilities, Inc. (2014) as "a multi-tier approach to the early identification and support of students with learning and behavior needs". This study will provide a motivation intervention for schools using RTI.

Limitations and Delimitations

This study is limited to rural Southwest Minnesota and Iowa schools. The population is limited to students in second and third grade.

A limitation to the study is the small number of participants used. According to GPower 3.1.92 (Informer Technologies, Inc., 2015) a sample size of approximately 211 was needed to better determine the impact of the intervention.

Potential limitations of the study are the geographical limitations of rural Midwestern schools, which will impact generalizability (Vogt, 2007). Minnesota schools included in the study have high demographic variations, ranging from 66.6%- 97.9%

Caucasian, with American Indian, Black or African American, Asian, and Hispanic making up the other percentage (Minnesota Department of Education, 2014). The Iowa school included in the study has a Hispanic population of 2%, an African American population of 1%, a multi-race population of 3% and a Caucasian population of 94% (Iowa Department of Education, 2015).

Zentall and Lee (2012) recommended untangling the three components in the combined motivation intervention in future research. While separating the three components (intrinsic standards, positive label, and extrinsic standards) is still needed in future research, the present study will not separate them. There is validity to using a combined motivation intervention, as Guthrie, Kauda and Ho's (2013) study stated in the implications for future practice section of their study. Guthrie, Kauda and Ho's (2013) study supports a combined motivation intervention, finding that engagement and achievement will improve given multiple supports due to the varied facets of a child's motivation.

Students who have ADHD but have not shared this information with the school were potential participants in the study. These students may or may not be taking medication for their ADHD. Students with ADHD who have not been identified as a Section 504 or Special Education candidate likely do not have a condition that is impacting their academics. Students who are being referred for special education services or receiving Tier 2 interventions will not be included in the study and subsequently replaced with another student.

This study uses a small dosage of intervention. Students participated in one session with a duration of 3 minutes. This limited dosage of the intervention may not be sufficient to determine the extent of the effect of the motivation intervention.

The GORT-5 may not be sensitive enough to changes in reading comprehension and fluency and improvements may not be reported as significant. Scores may improve one or two points on a 30 point scale from pretest to posttest.

CHAPTER 2: LITERATURE REVIEW

The chapter begins with a brief history of motivation and related studies. Then, motivation was separated into two main categories, intrinsic and extrinsic. Both were discussed for their academic relationship, especially for primary students. There are limited studies regarding motivation for students with mild disabilities.

History of Reading Interventions

Reading has been important to the United States Department of Education for years, resulting in initiatives such as No Child Left Behind, (US Department of Education, 2012) Individuals with Disabilities Education Act (Center for Parent Information and Resources, 2015) and Read Well By Third Grade (Minn. Stat. § 122A.06, 2014). Reading interventions work to close the achievement gap, improving scores so that all students are reading closer to their age or grade level peers. Individuals with Disabilities Education Act Part B mandates that states permit the use of a process based on the child's response to scientific, research-based intervention in reading, writing, and mathematics (Center for Parent Information and Resources, 2015).

Multi-Tierred System of Support

Since its inception in 1982, (Heller, Holtzman, Messick, & National Research Council, 1982) multi-tiered systems of support have been used as effective ways to provided early intervention services. This process is used to support those who are at risk and falling behind their peers in grade level academics. Students who are repeatedly unresponsive to these high quality, intense interventions may be referred and potentially

qualify students for receiving special education services. Heller, Holtzman, Messick and National Research Council (1982) proposed a multi-tiered system of support to decrease disproportionality in special education. Some (Vaughn & Fuchs, 2003) have criticized the discrepancy model. Criticisms of the discrepancy model include measurement and conceptual problems, and few cognitive or affective characteristics differentiate poor readers with discrepancies from those without discrepancies (Vaughn & Fuchs, 2003). Vaughn and Fuchs (2003) propose a response-to-instruction approach, also known as a multi-tiered system, as a better method of identifying learning disabilities. A multi-tiered system of support is designed to provide research-based, high quality, general education interventions for students so that students are not overrepresented in the special education category learning disabled. There are several models for multi-tiered systems of support, one of which is depicted in Figure 1 (Center on Response to Intervention, 2012).

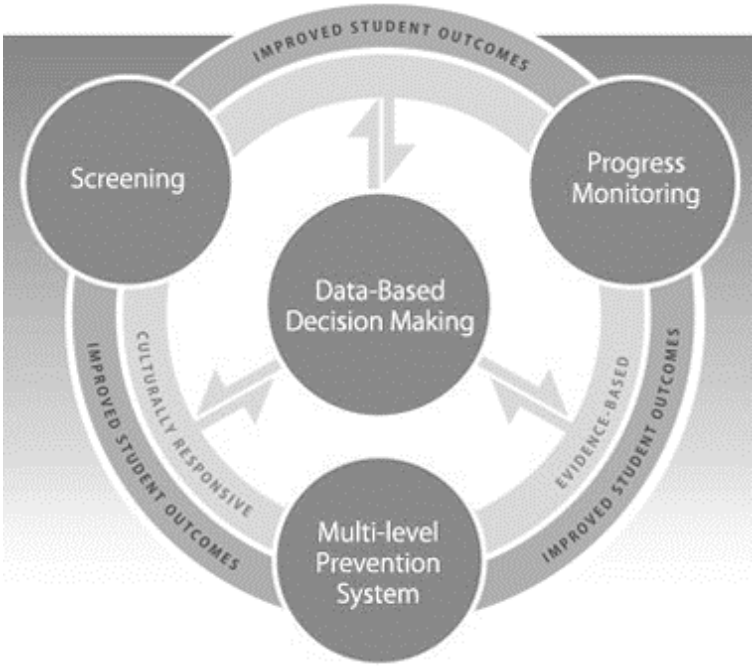

Figure 1: *Multi-tiered system of support example*

The 2004 reauthorization of the Individuals with Disabilities Education Improvement Act made, for the first time, the use of response to intervention (RtI) or a multi-tiered system of support acceptable as an alternative means of identifying students with specific learning disabilities (Berkeley, Bender, Peaster, & Saunders, 2009). This multi-tiered system of support was not mandated, but the 50 states now had the option to use this as a way of identifying a specific learning disability. Many states tried to use some type of multi-tiered system of support (Berkeley, Bender, Peaster, & Saunders, 2009). Although a multi-tiered system of support is not required in some states (Minnesota Department of Education, 2011), districts have been required to use this system to support readers, especially those who are young. States publish guidelines

(Stai, 2013) for establishing reading interventions, guidelines for successfully implementing multi-tiered systems of support, data entry requirements for student reading proviciency, and technical reports for effective reading instruction.

Schools may choose to change the intensity of interventions in order to target specific student needs or to increase efficiency. The intensity of interventions can be increased at Tier 3 by changing a number of variables including time and instruction. Examples of increased intensity are decreasing group size and increasing time in intervention (Vaughn, Denton, & Fletcher, 2010), by extending the duration of the lessons (Denton et al., 2013), increasing the frequency of teacher–student interactions (Warren, Fey, & Yoder, 2007), changing the pacing of instruction both within and across lessons (Vaughn et al., 2010), and planning instruction to target specific student needs may also increase instructional intensity by increasing its efficiency.

Strategies have been implemented to improve reading achievement for students with learning disabilities including evidence-based curriculum. In a qualitative study, (Melekoglu, 2011) using students grades 4-11, it was found that students with learning disabilities have significant struggles with reading, even given evidence-based curriculum. Melekoglu (2011) found that students with learning disabilities made gains, but these students were still performing below grade level. Readers can infer that students need more than evidence-based curriculum to make reading gains.

Evidence (Denton, Fletcher, Anthony, & Francis, 2006) supports an intensive, individualized, reading intervention for students in early elementary grades. This

randomized control study includes 72 second grade students from ten different schools who were unresponsive to both quality grade level instruction and small group interventions in reading. Students in the intervention group received intensive instruction in small groups by highly trained teachers. The study found that all outcomes except reading fluency met criteria for substantive importance. Students who received the research intervention made significantly better growth than those who received typical school instruction on measures of word identification (b=.44), phonemic decoding (b=.40), and word reading fluency (b=.12) and on a measure of sentence- and paragraph-level reading comprehension (b=.58). Students also made growth, although smaller and not statistically significant, in phonemic decoding efficiency (b=.40), text reading fluency (b=.39), and reading comprehension in extended text (b=.35). This study shows the importance of interventions on reading achievement for students the same age as those included in the present study.

Solis, Ciullo, Vaughn, Pyle, Hassaram and Leroux (2014) used a Response to Intervention framework to conduct a three year longitudinal study for students grades 6-8 to examine reading outcomes. This randomized control and treatment study with 1,025 participants used reading data to move students in and out of three tiers of support. The three tiers of support differed in group size, instructional minutes, intervention tools, and intervention topics. The study found that students with low reading comprehension in the intervention group outperformed students in the control group (ES = 0.26). Students in the intervention group made more gains than typical readers, however at the end of the

study there was still a significant gap between struggling and typical readers. Trajectory data suggested that these students, depending on other variables, may catch up to typical readers by grade 12, were the intervention continued. This study demonstrates the importance of reading interventions for students with low comprehension ability, similar to the struggles of students in the present study.

Effective Reading Interventions

Scientifically-based reading instruction is mandated by governmental statutes (Minn. Stat. § 122A.06, 2014). This statute states that programs and instruction must have, at minimum, effective, balanced instruction in all five areas of reading. The five areas of reading are fluency, phonemics, phonics, reading comprehension, and vocabulary development. Scientifically based reading instruction includes and integrates instructional strategies for continuously assessing, evaluation, and communicating student's reading progress and needs in order to design and implement ongoing interventions. Scientifically-based reading instruction ensures that all students, no matter their age or proficiency, can comprehend text and apply higher level thinking skills (Minn. Stat. § 122A.06, 2014).

The Institute of Education Sciences (IES) publishes findings that support best practice in current education challenges. Researchers combine their findings with research to identify best practice. Findings are given ratings from minimal to strong with the purpose of providing resources for educators. One of the topics identified by IES is reading comprehension for lower elementary students. Five recommendations are made

in the practice guide, (Knechtel, Sama-Miller, Sattar, & Wissel, 2010, p. 7-8) including: 1) reading comprehension strategies, 2) identify and use the text's original structure, 3) focused, high quality discussion on the meaning of the text, 4) select texts purposefully to support comprehension development, and 5) establish an engaging and motivating context in which to teach reading comprehension. Recommendations three and four only have minimum level of evidence that supports their effectiveness while recommendation one has strong evidence, and recommendations two and five have moderate evidence (Knechtel, Sama-Miller, Sattar, & Wissel, 2010).

In their practice guide, Knechtel, Sama-Miller, Sattar, & Wissel (2010) found strong evidence supporting the positive effects of reading comprehension strategies. The guide identified the most effective comprehension strategies for beginning readers using studies that showed strong effects on comprehension. These comprehension strategies include activating prior knowledge/predict, question, visualize, monitor/clarify/fix up, draw inferences, and summarize/retell (Knechtel, Sama-Miller, Sattar, & Wissel, 2010, p. 54). In a reciprocal teaching study (Williamson, 1989) including ten first and second grade classrooms, a significant effect was found for comprehension strategies (activating prior knowledge/predict, question, visualize, monitor/clarify/fix up, and summarize/retell). Significant positive comprehension effects ($p=0.046$) were also found for the visualization strategy in Center et al.'s (1999) study including 66 students with an average age of 7.6. Hansen's (1981) study including 24 second grade students showed positive effects for prior knowledge/predict and draw inferences. Morrow, Pressley, and

Smith's (1995) study found positive effects for summarize/retell among six third grade classrooms. Paris, Cross, and Lipson (1984) studied four, third grade classrooms using Informed Strategies for Learning and found positive effects for activating prior knowledge/predict, monitor/clarify/fix up, and draw inferences. Of the five recommendations, reading comprehension strategies had the strongest evidence of success.

The second recommendation in the practice guide (Knechtel, Sama-Miller, Sattar, & Wissel, 2010) for teaching reading comprehension was to identify and use the text's original structure. There was moderate evidence (defined by Institute of Education Sciences criteria) of a positive comprehension effect in the studies. Text structures of informational text include description, sequence, problem/solution, cause/effect, and compare/contrast. Text structures included in narrative text include characters, setting, goal, problem, plot/action, resolution, and theme. Using randomized controlled trials with 74 first grade students, Baumann and Bergeron (1993) found positive effects for comprehension using story mapping, although the results were not significant. In a similar study using narrative text, Morrow (1984) found comprehension gains using 254 kindergarten students. Significant positive comprehension results were found in Morrow's (1996) study using narrative text with six second grade classrooms in the United Kingdom. Reutzel, Smith, and Fawson (2005) studied four high poverty, low performing, second grade classrooms and found positive comprehension effects in informational text. Williams et al. (2007) also found positive comprehension effects in

informational text in a study including ten second grade classrooms. These studies have supported the importance of text structure on reading comprehension, with two implementation suggestions: 1) explain how to identify and connect the parts of narrative texts and 2) provide instruction on common structures of informational texts (Knechtel, Sama-Miller, Sattar, & Wissel, 2010, p. 18-19).

The last recommendation in the practice guide (Knechtel, Sama-Miller, Sattar, & Wissel, 2010) is for teachers to engage or motivate students. Nine studies incorporate one or more components of engagement or motivation: 1) help students discover the purpose and benefits of reading, 2) create opportunities for students to see themselves as successful readers, 3) give students reading choices, and 4) give students the opportunity to learn by collaborating with their peers. These studies found positive connections, some significant, to reading comprehension.

Together, these studies reviewed in the practice guide (Knechtel, Sama-Miller, Sattar, & Wissel, 2010) found evidence that a motivating and engaging context improves reading comprehension. Baumann's (1986) study provided a lesson purpose, which was motivating for students and effective for comprehension. Baumann and Bergeron's (1993) study using 74 first graders found that providing collaborative learning activities had positive comprehension effects. In a similary study using randomized controlled trials with 100 elementary students, Fizzano (2000) found that hands on and collaborative learning activities positively impact comprehension. In quazi-experimental design studies with third graders, motivating purpose, (Guthrie et al., 2004; Guthrie et al., 2006)

opportunities for student success, (Guthrie et al., 2006), student choice (Guthrie et al., 2006) and collaborative learning activities (Guthrie et al., 2006) were found to improve comprehension. Studies (Morrow, 1996; Morrow, Pressley, & Smith, 1995) found that motivating purpose, student choice, and collaborative learning experiences were engaging and motivating strategies that improved reading comprehension. Quasi-experimental studies (Stevens & Slavin, 1995a; Stevens & Slavin, 1995b) with second through sixth grade participants found that motivating purpose, opportunities for student success, student choice, and collaborative learning activities have a positive impact on reading comprehension.

Solis et al. (2012) examined studies for students with learning disabilities in middle school to determine effect sizes for reading interventions. Twelve studies including experimental, quasi-experimental, and single-subject were included. Intervention strategies included main idea-summarization, strategy instruction, mapping, mnemonics, multi-component interventions, and self-monitoring procedures. The analysis showed that effect sizes were larger for researcher-developed measures in main ideas, cause and effect, and inferences (ES = 6.66) and on measures of factual questions (ES = 1.98) than standardized measures of comprehension. This study is important because it supports a multi-tiered reading intervention not only as an early intervention but through middle school as well.

Wanzek et al. (2013) used a meta-analysis to find effective reading interventions for middle school students with learning disabilities. The analysis only included studies

that had at least 75 instructional sessions. Ten studies met the additional criteria, being treatment-comparison experimental or quasi-experimental design. Reading interventions used in this study included multi-sensory phonics instruction, fluency instruction, vocabulary instruction, self-visual imagery, self-questioning, paraphrasing, and inferences instruction. Wanzek et al. (2013) did not find a significant difference related to instructional group size, number of hours of intervention, or grade level of intervention. The findings in the study suggest that researcher-developed measures were more effective than standardized measures. It was found that interventions that utilized strategy instruction related to main idea or summarization aid in text comprehension. It was found that self-monitoring, mnemonics, mapping, and questioning improved text comprehension. Wanzek et al. (2013) found that reading interventions are more challenging at older grades than younger grades. The most consistent finding across studies was that explicit instruction including modeling, feedback, and opportunities for practice benefit students with learning disabilities.

Brief Chronological History of Motivation in Education

Motivation has been studied for over 100 years, beginning with Sigmund Freud's concept of trieb. Since then, aspects of motivation such as physiological, behavioral, instinctual, psychoanalytical, and humanistic have been studied. Learning theorists (Csikzentmihalyi, 1990; Maslow, 1943; Schunk & Usher, 2012) have found that motivation is an important part of the learning process. Although Sigmund Freud used a different term for motivation (trieb), his work contributed to motivation understanding

(Freud, 2011; Freud, O'Neil, & Akhtar, 2011). He postulated that when an individual has a need, energy is directed toward that. Individuals strive to meet the need because the energy directed toward the need is unpleasant. Freud's (2011) trieb theory was that motivation energy changed form but not amount. For example, an individual may repress a need, but the repressed energy may manifest in something such as overeating.

Another contributor to motivation understanding is Clark Hull's (Hull, 1935) physiological perspective and drive theory. Hull postulated that human performance is influenced by physiological deficits (Hull, 1935). An example of Hull's drive theory is that if an organism is hungry, the individual will engage in behaviors that will reduce the hunger. Hull postulated that humans have other needs than survival and introduced secondary reinforcers such as money. Hull proposed that survival reinforcers paired with secondary reinforcers influence behavior. Hull's work was important, but led Schunk (1996) to question drive theory as some individuals put aside a primal need aside to fulfill a goal.

As a reaction to Freud's work, behaviorism came to the forefront of studies in the early twentieth century. Behaviorists studied motivation in terms of probability and frequency of behavior rather than as a mental construct. Pavlov (Pavlov, 2011) contributed the passive view of motivation known as classical conditioning. Operant conditioning was proposed by Skinner (1982), which postulates that consequences determine future behaviors.

Humanistic theory relates motivated behavior to needs. Maslow's (1943) hierarchy of needs contributed to current understanding of motivation. This theory states that people need to satisfy lower level needs before attaining higher levels of need. The levels in increasing importance are physiological, safety, belongingness, esteem, and self-actualization. Maslow postulated, for example, that individuals need to take care of their hunger before they can achieve recognition.

Prominent cognitive theories of motivation emerged including intrinsic motivation, goal theory, achievement motivation, attribution theory, and the social cognitive theory of motivation (Schunk & Usher, 2012). Each of these theories is grounded in cognitive process, but has differing emphasis (Schunk & Usher, 2012).

Intrinsic motivation is enjoyment in an activity. Csikzentmihalyi (1990) discovered the concept of flow. Flow is based on Aristotle's notion that humans seek happiness. Flow is deep enjoyment, creativity, and a total involvement with life. Csikzentmihalyi (1990) describes a flow state as when one is engaged in self-controlled, goal-related, meaningful actions. He established that enjoyment is universal and helps people grow their skills.

Latham Locke (1990) created goal theory. Goal theory shares similar characteristics with intrinsic motivation. Goal theory is divided into two concepts, performance and mastery goals (Locke, 1990). The type of goal orientation an individual identifies with impacts behaviors and outcomes. Individuals who subscribe to mastery goals, also known as performance goals, tend to focus on learning strategies and

processes, learning based on self-standards for improvement (Pintrich & Schunk, 2002). Individuals who subscribe to performance goals focus on task completion, and compare their skills to others (Li, Solmon, Lee, Purvis, & Chu, 2007).

Schunk (1996) defined achievement motivation as an individual's motivation to perform difficult tasks to the best of their ability. Theories in achievement motivation are known as the expectancy-value because they include two components: the extent an individual values the outcome and the likelihood the individual will achieve that outcome. The expectancy-value theories moved away from behaviorist models toward perceptions and beliefs. Cognitive and environmental theories have more recently been added to expectancy-value theory.

Attribution theory is defined as the explanations individuals give for their behavior (Weiner, 2012). Attribution theory focuses on an individual's perceptions of locus of control. Successes and failures come from a variety of causes and have different dimensions.

Albert Bandura (1977) developed the social cognitive theory, which is centered on goals and an individual's expectations in learning. Bandura postulated that people set goals, and then self-evaluate their progress toward those goals. Expectations of success, and self-efficacy beliefs influence the goals people set. Self-efficacy was defined as judgments of one's capability. Bandura proposed that self-efficacy can either low or raise one's expectations for success, and therefore cause people to set goals that are more or less easily to attain. An important part of Bandura's theory is social comparison.

Bandura hypothesized that individuals often observe others similar to themselves in order to make predictions about their own performance. If the individual observes someone succeed at a task, the observer's self-efficacy may rise, and they may be more motivated to attempt the task themselves. If the individual observes someone fail, they may believe they too are less likely to attain a similar outcome or goal. Task difficulty impacts self-efficacy in that more difficult tasks result in higher self-confidence. Bandura also postulated that the source of student feedback will impact self-efficacy, with teacher feedback being more effective than peer feedback. Schunk (1996) suggests that goal setting, performance feedback, rewards, and instructional presentation can improve efficacy.

A motivation theory popular in the K-12 setting is the idea of growth mindset. Psychologist and researcher Dweck (2006) has studied success and achievement and has written on the power of mindset. Dweck (2006) explains that it's not just abilities and talent that determine success, but one's mindset. Dweck postulated that mindset can be fixed or one of growth. Dweck asserts that hard work and persistence play a major role in success. Feedback that is centered around one's hard work and persistence can motivate students, whereas feedback that is centered around intelligence can hinder success (Dweck, 2006).

Motivation interventions are built on what has been established in research and motivational theories. Studies (Cerasoli, Nicklin, & Ford, 2014, McGeown, Norgate & Warhurst, 2012; Naeghel, Van Keer, Vansteenkiste & Rosseel, 2012; Wang & Guthrie,

2004) have shown the merits of both extrinsic and intrinsic motivation. Recently, Cerasoli, Nicklin, and Ford (2014) studied the benefits of intrinsic and extrinsic motivation. It was found that it is unlikely for individuals who enjoy any task to do poorly with the task. In this study, it was found that intrinsic motivation predicts the quality of the task, with extrinsic motivation impacting the quantity of the task. This study also found that incentives (extrinsic motivation) can boost intrinsic motivation (Cerasoli, Nicklin, & Ford, 2014). In the present study, a combined motivation intervention is used (intrinsic standards, positive label, extrinsic standards).

Motivation and Achievement

Reading achievement is often paired with motivation in research (Campbell & Pritchard, 1976; Maier, 1955; Pinder, 2011) and teaching practices (Afflerbach, Cho, Kim, Crassas & Doyle, 2013). Authors (Afflerbach et al., 2013) for the International Reading Association write that the five reading pillars (phonemic awareness, phonics, fluency, vocabulary, and comprehension) are important, but other components are also critical for readers, such as motivation. Researchers (Campbell & Pritchard, 1976; Maier, 1955; Pinder, 2011) have found that to study performance, motivation should be included, as it is a fundamental component in the reading process.

Motivation is a growing topic of interest among educators. There has been an increase in peer-reviewed journal articles from 2003-2013 discussing academic motivation, with record high numbers in 2011-2012 (Conradi, Jang, & McKenna, 2013). The increased numbers are partially attributed to additional international studies (Conradi

et al., 2013). Some (Council of Chief State School Officers, & National Governors Association Center for Best Practices, 2014) speculated that the evolved conception of reading and the new common core reading standards was a factor in the increase in articles.

There are multiple reading benefits for those who are motivated. Established motivation researchers (Guthrie, Wigfield & You, 2012) wrote that motivated readers choose to invest time and effort in the reading process. Motivated readers use their time for information gathering, knowledge building, or personal enjoyment

Reading and motivation have been paired in many experimental, correlational, and longitudinal studies (Conradi et al., 2013; Lee, 2010; Naeghel, Van Keer, Vansteenkiste & Rosseel, 2012; Taboada et al., 2009) that positively associate reading motivation and reading comprehension. Since motivation impacts comprehension scores, teachers want to implement interventions that improve motivation (Conradi et al., 2013; Goodman et al, 2011; Lee, 2010; Zentall & Lee, 2012). Guthrie, Klauda and Ho (2013) affirm the use of a combined motivation, based on their Intervention Reading/Language Arts Model.

Intrinsic Motivation

Self-determination theory states that individuals are more likely to participate in things they can identify with and find enjoyable (Patall, Cooper, & Robinson, 2008). It also states that high intrinsic motivation results in more effort (Simons, Dewitte, & Lens, 2004). Intrinsically motivated people have additional persistence in the task (Deci,

1972). This persistence has been found in academic achievement (Gottfried, 1985), job performance, (Grant, 2008) and test performance (Vansteenkiste, Lens, & Deci, 2006).

Through both recent and landmark research, educators have learned that intrinsic motivation is important for reading achievement (eg. Baker & Wigfield, 1999; Chapman & Timmer 1995; International Reading Association; 2000 Jang & McKenna, 2013). Established motivational researchers, Guthrie, Kauda and Ho (2013), concluded that intrinsic motivation, value, self-efficacy, and prosocial goals correlate positively with reading achievement. Early intrinsic reading motivation has been found to predict later reading achievement (Becker, McElvany & Kortenbruck, 2010; Unrau & Schlackman, 2006; Wang & Guthrie, 2004).

Baker and Wigfield (1999) have been cited in multiple articles and their study has been used as a basis for research in reading motivation. In their study, 371 fifth- and sixth-grade students of mixed demographics participated by taking *The Motivation for Reading Questionnaire* (Wigfield & Guthrie, 1997) and answering two questions assessing self-reported reading activity. This study established that motivation is multi-dimensional, with analysis of 11 dimensions of reading motivation, confirming Wigfield and Guthrie's (1997) findings. The dimensions most strongly related to reading activity were two intrinsic goal related dimensions (self-efficacy and challenge) and social reasons for reading (curiosity and Involvement). The researchers found that children who believe they are capable of reading well and are intrinsically motivated to read report that they read more frequently (Baker & Wigfield, 1999, p. 470). The study found that

students with highest levels of motivation read the most and students with lowest levels of motivation read the least. A major finding in this study is that children need more than cognitive ability to be successful in reading; children need to be motivated to engage in literary activities.

The purpose of the task may have differing links to intrinsic motivation, with quantity-centered tasks being weaker connected to intrinsic motivation and quality-centered tasks having a stronger connection to intrinsic motivation (Cerasoli, Nicklin & Ford, 2014). Studies (Kruglanski, Friedman, & Zeevi, 1971; Wimperis & Farr, 1979) have shown that tasks that require quality have a connection to intrinsic motivation. Researchers Cerasoli, Nicklin and Ford (2014) explain that these tasks require a higher degree of complexity and engagement of more skill, which commands a greater deal of personal investment. These same studies (Kruglanski, Friedman, & Zeevi, 1971; Wimperis & Farr, 1979) have also shown that tasks requiring quantity have a weaker connection to intrinsic motivation. In their study, researchers (Gilliland & Landis, 1992) explain that these quantity-based tasks tend to be lower in complexity and require less personal cognitive investment. These tasks require behavior that is focused, persisted, and structured, which does not associate with intrinsic motivation (Cerasoli, Nicklin & Ford, 2014).

It is also unknown whether and to what degree incentives moderate the predictive validity of intrinsic motivation (Cerasoli, Nicklin, & Ford, 2014). The self-determination may be able to explain this; however the concept has not been developed.

Cerasoli, Nicklin, and Ford (2014) support McClelland's (1955) theory of achievement motivation which postulates intrinsically motivated people are generally more productive and perform well. In a quantitative relational study, intrinsic motivation has been found to facilitate conceptual learning, performance, school enjoyment, and both intentions and actual school persistence creativity, persistence, and life-long learning (Goodman et al, 2011). In addition, intrinsic motivation (challenge, curiosity, involvement) has been positively correlated with reading performance in frequency, engagement, comprehension, and grade point average (Goodman et al, 2011; McGeown, Norgate & Warhurst, 2012; Naeghel, Van Keer, Vansteenkiste & Rosseel, 2012; Wang & Guthrie, 2004).

Despite the strong relationship between intrinsic motivation and reading achievement in those studies, Guthrie, Kauda & Ho (2013) found that informational text comprehension correlated negatively with intrinsic motivation. Educators want to find ways to increase intrinsic motivation, yet informational text is vital to reading of all ages. This is why building up extrinsic motivation in the form of situational interest has become noticed by researchers such as Paige (2011). Paige designed an untested model using Hidi and Renninger's (2006) four-phase model to increase extrinsic motivation through increasing situational interest and engagement with the purpose of developing intrinsic motivation. The four-phase model describes four phases in the development and deepening of learner interest: triggered situational interest, maintained situational interest, emerging (less-developed) individual interest, and well-developed individual interest.

Extrinsic Motivation

Extrinsic motivation carries the same definition across studies; however different measures of extrinsic motivation have been used depending on the questionnaire or scale (grades, recognition, competition, socialization, and rewards). The next section will focus on motivation's effects on academic achievement in reading. Research (Cerasoli, Nicklin & Ford, 2014) findings in domains other than education showed more favorable results of extrinsic motivation. Although there are different aspects to extrinsic motivation, the majority of research (Becker, McElvany, & Kortenbruck 2010; Wang & Guthrie, 2004) has found that extrinsic motivation either does not impact reading achievement, or impacts it negatively.

Goodman et al (2011) examined socialization and rewards and found these extrinsic motivators had no impact on academic achievement. Although a direct connection was not established, the study (Goodman et al, 2011) found that extrinsic motivation triggers effort. Some (Paige, 2011) have used extrinsic motivation to increase and develop intrinsic motivation, which does have a positive effect on reading achievement. Some studies (Becker, McElvany, & Kortenbruck , 2010) have found a bidirectional relationship between extrinsic motivation and reading achievement, indicating that struggling readers have low motivation to read, and students with low motivation to read have lower reading achievement. When using the SRQ-Reading Motivation scale, extrinsic motivation was again found to have a significant negative

relationship with reading comprehension (Naeghel, Van Keer, Vansteenkiste & Rosseel, 2012).

Studies including Intrinsic and Extrinsic Motivation

Since the effects of extrinsic have been debated, researchers (Cerasoli, Nicklin & Ford, 2014) conducted a meta-analysis of 40 years of research, including findings from school, work, and physical domains (k = 183, N = 212,468) to find that intrinsic motivation and extrinsic incentives can have benefits when used simultaneously. In their analysis, they found that intrinsic motivation is a medium to strong predictor of performance (ρ = .21–45), performance referring to quality vs. quantity. Cerasoli, Nicklin and Ford (2014) wrote that to some extent both intrinsic and extrinsic motivations are functional in performance contexts. Noted psychologist Vroom (1964) wrote that extrinsic incentives are motivating only to the extent that an individual believes attaining the incentive is instrumental toward other things of value. Another factor is that the success of intrinsic or extrinsic motivation depends on the type of performance and the contingency of the incentive. These are potential factors that could explain the differential outcomes in studies.

Becker, McElvany and Kortenbruck (2010) examined the longitudinal relationships of intrinsic and extrinsic motivation with reading literacy development using 740 third grade students. Comprehension (Hamburger Lesetest), vocabulary (CFT vocabulary test), and decoding speed (WÜrzburg Silent Reading Test) were measured for students in three subsequent grade levels. Intrinsic motivation was measured by the

author's own 4-item questionnaire. Extrinsic motivation was measured with a 3-item questionnaire developed by the author. Becker, McElvany and Kortenbruck (2010) measured reading frequency through parent questionnaires and student self-report. The study found that the relationship between intrinsic reading motivation and later reading literacy was mediated by reading amount but not when previous reading literacy was included in the model. A second finding was a bidirectional relationship between extrinsic reading motivation and reading literacy.

In their study, Goodman et al. (2011) found that intrinsic motivation is the strongest predictor of academic performance. Through a survey of 254 university students, Goodman et al. (2011) explored the relationship between motivation and academic performance, measured with grade point average (GPA). The empirical results obtained from the data, using the Pearson correlation coefficients, indicated significant relationships between intrinsic motivation, extrinsic motivation and academic performance. The study found that students who feel motivated (intrinsically and extrinsically) may, therefore, be inclined to exert effort and perform well. Although benefits of extrinsic motivation were found, the researchers concluded that students in the study who have high intrinsic motivation have better GPA scores than students who have only extrinsic motivation.

In a landmark study, Wigfield and Guthrie (1997) explored different aspects of children's reading motivation and how children's motivation related to the amount (number of minutes per day children read outside of school) and breadth (kinds of

reading materials: comics, magazines, newspapers, books, mystery books, sports books, adventure books, and nature books) of their reading. Fourth- and Fifth-grade students were the first to use the tool (*The Motivation for Reading Questionnaire*) developed by the researchers and used in multiple studies since. To assess reading amount and breadth, participants' journals and questionnaires were used. This study found that reading motivation is multidimensional. Children's motivation predicted amount and breadth of reading, even when previous amount and breadth of reading was controlled. Children with higher intrinsic motivation read more, and with more breadth, than students with lower intrinsic motivation. Intrinsic motivation predicted amount and breadth of reading more than extrinsic motivation.

In a longitudinal study, Becker, Mcelvany and Kortenbruck (2014) found that third grade reading literacy predicted fourth grade reading motivation, meaning "individuals enjoy activities they are good at and are thus motivated to engage in them in the future" (p. 781). In this study, 740 participants were studied to examine the relationships of intrinsic and extrinsic motivation in literacy development. The researchers used structural equation modeling to determine the impact of Grade 4 intrinsic reading motivation on grade 6 reading performance. Their findings were consistent with their hypothesis that motivation would predict reading amount and that increased reading amount would predict higher reading literacy (Becker, Mcelvany & Kortenbruck, 2014). An analysis found that extrinsic motivation was negatively

associated with reading amount and reading literacy. When prior reading ability was included as a predictor, these amounts failed to reach statistical significance.

Relationship between Intrinsic and Extrinsic Motivation

Landmark research conducted by Deci and Ryan (1985) established the self-determination theory of intrinsic motivation. This theory posits that humans continually and actively seek challenges and new experiences to develop and master. In education, the self-determination theory states that students are motivated to achieve different objectives. When the student determines that the locus of control is internal to the self, this is self-determined behavior, versus the behavior being controlled externally. Deci, Vallerand, Pelletier, and Ryan (1991) established that the important distinction between the internal or external controls is in their internal regulatory processes and how the internal regulatory processes drive external behaviors. Self-determined behaviors are known as intentional or motivated.

Extrinsic motivation has not been found to improve reading achievement, except when associated with intrinsic motivation (Wang and Guthrie, 2004). In their study, Becker, McElvany, and Kortenbruck (2010) stated that this negative relationship between extrinsic motivation and reading achievement implies, "early reading failure leads to higher extrinsic motivation, with children reading only when they have to, which in turn leads to poorer reading skills" (p. 781). Another explanation for the negative relationship between extrinsic motivation and reading achievement is that extrinsically motivated readers may not adequately focus on the text. Motivation researchers Guthrie and Wang

(2004) explain that the lack of focus leads to ineffective strategies and inaccurate inferences.

The only learners who may benefit from extrinsic motivation (grades and competition) are good readers (Lee, 2010). Using the Motivation for Reading Questionnaire, Wigfield and Guihrie (1997) found that extrinsic motivation (competition and grades), determined a variance in reading scores for good readers. McGeown, Norgate and Warhurst (2012) explained that good readers have strong levels of intrinsic motivation, which protects them against possible harmful effects of extrinsic motivation. In this study, poor readers did not demonstrate any relationship between motivation (extrinsic nor intrinsic) and reading achievement.

Funded by the Institute for Research on Teaching, Brophy and Merrick's (1987) research established the effectiveness of teachers capitalizing on students' existing intrinsic motivation. In their study (Brophy & Merrick, 1987), they developed and used a list of motivational preconditions and strategies. This comprehensive list has specific suggestions for each of these categories: essential preconditions, motivating by maintaining success expectations, motivating by supplying extrinsic incentives, motivating by capitalizing on students' existing motivation, and strategies for stimulating student motivation to learn. Brophy and Merrick trained teachers on 24 of these strategies for use in their study at junior high schools. Once teachers were trained, the teacher's implementation was monitored and the effects on student achievement and motivation were measured. With some inconsistency with teachers implementing the

program correctly, the study found that students' existing intrinsic motivation got better motivational results than teachers who stressed strategies for motivating students to learn. Brophy and Merrick (1987) used their results to conclude that systematic teacher implementation of strategies for motivating students to learn may produce improvements in student achievement.

Factors Impacting Reading Motivation

Motivation has been found to differ across cultures (Wigfield & Guthrie, 2007). Their study (Wigfield & Guthrie, 2007) found that African American students had more positive academic motivation than students in the United States. Using Wigfield and Guthrie's (2007) Reading Motivation Questionnaire, Mucherah and Ambrose-Stahl (2014) also found motivation for reading to be different in the United States and Kenya. The study found that efficacy and importance of reading were predictors of reading achievement for students from the United States while challenge and compliance were predictors of reading achievement for the Kenyan students (Mucherah & Ambrose-Stahl, 2014, p. 154). Unraua and Schlackman (2006) found differences in the impact of intrinsic motivation on reading achievement across culture. Their study (Unraua & Schlackman, 2006) also found that Asian students had a stronger positive relationship between reading achievement and intrinsic motivation than Hispanic students. Although cultural settings may impact the type of motivation students have (e.g. competition, curiosity), Wang & Guthrie (2004) found that across cultures, intrinsic motivation directly predicted reading achievement.

Wigfield and Guthrie (2007) found that motivation varied across gender. Their study discovered that girls have more positive reading motivation than boys. Using Wigfield and Guthrie's (2007) Reading Motivation Questionnaire, Mucherah and Ambrose-Stahl (2014) found motivation for reading to be different across gender (girls reported being more motivated by compliance and social reasons and boys by challenge).

Motivation Deficit for Students with a Learning Disability in Reading

Lee (2010) found that readers with difficulties/disabilities had lower reading motivation (intrinsic, extrinsic, social motivation, and self-efficacy), which correlate with McGeown, Norgate and Warhurst's (2012) findings that good readers had higher intrinsic motivation than poor readers (in challenge and efficacy). However, McGeown, Norgate and Warhurst (2012) found that extrinsic motivation levels were similar for good and poor readers. Given a highly structured, research-based reading program, Melekoglu (2011) found that learners with specific learning disabilities did not make significant gains in motivation compared to their peers, who did have significant improvement in motivation. In a similar study, Melekoglu and Wilkerson (2013) studied elementary and high school students with reading difficulty and found that students with a disability have actually lost motivation for reading while their peers increase motivation over time.

Factors that Improve Motivation

Studies have identified things that improve motivation such as autonomy. In their study (Gillet, Vallerand & Lafrenière, 2012), it was found that teacher autonomy support mediated the age-school motivation relationships. The researchers concluded that

teachers and parents, especially mothers, who provide autonomy support by taking the children's perspective and providing opportunities for choice and participation in decision making, while minimizing the use of pressure, have a positive impact on a student's motivational process (Gillet et al., 2012). After conducting multiple studies on motivation, Guthrie, Kauda and Ho (2013) concluded that teachers who provide autonomy support improved student motivation, engagement, and academic achievement.

Cole (2014) suggests that educators find a time to celebrate all students as not to leave anyone out. She also suggests providing varied feedback bsed on student strengths, which has been supported by research (Butler, Godbole, & Marsh, 2013; Zentall & Morris, 2010).

Motivation Interventions

In a randomized controlled trial including participants grades 6 to 10, Schiller et al. (2012) used Fusion Reading with students for two years. Schiller et al. (2012) found that motivation strategies paired with other strategies improved reading outcomes. Motivation strategies used were setting goals and reading text relevant for the age group. These motivation strategies were paired with vocabulary, paraphrasing and word study strategies that were explicitly taught by following a specific instructional routine. Reading outcomes (reading comprehension and sentence comprehension) for students in the intervention group significantly improved compared to the control group, who received reading instruction in a "business-as-usual" fashion.

Zentall and Lee (2012) used a combined motivation intervention (intrinsic standards, positive label, extrinsic standards) to differentiate outcomes for students with a learning disability in reading, students with ADHD, students with both ADHD and a learning disability in reading, and their nondisabled peers. In a pre- and post- test experiment, Zentall and Lee (2012) included 80 total participants in second- to fifth-grade. The number of participants in each grade level were unevenly represented, with 27 fourth grade students, 39 fifth grade, 7 third, and 7 second grade students. Teachers nominated students who had ADHD or inattention problems, students who have a reading disability or reading difficulty, and an equal number of nondisabled peers. Students were equally represented in each gender with 39 males and 41 females. Although the researchers accounted for prior ability in their results, all of the students scored above 75 on the School Ability Index. Students were Caucasian (83.8%), Hispanic (8.8%), African American (3.8%), and multicultural (3.8%). English was the primary language spoken by 95% of the students, with 5% of the students speaking Spanish as their primary language.

To determine which students would be included in the ADHD group, Zentall and Lee (2012) used the Conners Teacher Rating Scale–Revised: Short Form. Teachers filled out the rating scale for each participant. Those with a *T*-score of 60 or higher were assigned to the ADHD group. Seventeen students were identified using this method, 5.9% having a clinical diagnosis, with the other 94.1% being at risk for ADHD. Researchers used students who were both at-risk and clinically diagnosed with ADHD due to previous research (Loe & Feldman, 2007; Zentall & Beike, 2012), that supported

the theory that the groups share characteristics. Students in the ADHD group were currently performing at or above grade level on standardized achievement tests.

Zentall and Lee (2012) identified 33 students with a reading disability or reading difficulty who scored below the thirtieth percentile on standardized reading tests, indicating they did not pass. These students either met the IQ discrepancy determined by the school's identification procedure, resulting in the label of a learning disability or were receiving interventions in a Response to Intervention (RTI) process. Zentall and Lee (2012) used previous research (Shaywitz, Morris, & Shaywitz, 2008) to support these students being grouped together because they have equivalent skills.

Using the criteria for the ADHD and reading disabled, Zental and Lee (2012) found that 63.7% of the students had both ADHD and reading difficulty characteristics and could be placed in either group. The researchers chose to put students with ADHD and a reading disability into the reading disabled group due to similarities in their academic skills based on standardized testing.

For comparison, Zentall & Lee (2012) included students who were not at risk for ADHD or a reading disability. These students scored at or above average on standardized testing and received a *T*-score that was below 50 on the Conners Teacher Rating Scale–Revised: Short Form. Twenty students met these criteria.

Researchers (Zentall & Lee, 2012) administered the *Gray Oral Reading Test* (4th ed., GORT-4; Wiederholt & Bryant, 2001) according to the test examiner's manual, each session lasting 15 to 45 minutes. Students were assigned randomly to control and

intervention groups with equal numbers of participants in control and intervention and equal numbers of students from each group (ADHD, reading disability, nondisabled). Students in the intervention condition experienced a motivation intervention with three components: positive feedback, positive labeling, and external standards related to performance goals. Students in the control group did not receive motivational interventions, only instruction with positive intonation. The posttest (Form B) was administered right after the intervention following the same procedures during the pretest.

Zental and Lee (2012) used the ANCOVA, entering pretest comprehension scores as a covariate for posttest comprehension scores. Similarly, pretest fluency scores were used as a covariate for posttest fluency scores. The final ANCOVA resulted in a main-effect of group (ADHD, reading disabled, nondisabled) for reading comprehension $F(2, 73) = 5.46$, mean-squared error (MSE) = 2.34, $p = .006$, partial $\eta 2 = .130$, and a trend for fluency $F(2, 73) = 2.61$, MSE = 2.34, $p = .080$, partial $\eta 2 = .067$ (Zentall & Lee, 2012, p. 254). Both reading comprehension and fluency were medium effect sizes. Zentall and Lee (2012) then documented a main effect of condition (control or intervention) for reading comprehension $F(1, 73) = 17.98$, MSE = 2.34, $p < .001$, partial $\eta 2 = .198$, and for fluency, $F(1, 73) = 29.98$, MSE = 2.34, $p < .001$, partial $\eta 2 = .291$. Both reading comprehension and fluency had large effect sizes.

Since there weren't any significant interactions between group and condition, Zentall and Lee (2012) examined simple effects between conditions for each group using least square mean (LSM) differences from the Statistical Analysis System (SAS) General

Linear Model (GLM) procedure. Students in the reading disability group improved fluency (LSM differences = 3.43, p = .001) and reading comprehension (LSM differences = 3.42, p = .001). Nondisabled students improved fluency (LSM differences = 4.84, p = .001) and reading comprehension (LSM differences = 3.47, p = .001). Significant differences were found in improvement compared to the control group. There was not a difference in reading performance between students with a reading disability and their peers. Zentall and Lee (2012) attributed this intervention as normalizing the reading performance of students with a reading disability.

Using the LSM differences from the Statistical Analysis System General Linear Model procedure, students with ADHD did not improve reading comprehension (LSM differences = 1.12, p = .266) and had only slight improvement for reading fluency (LSM differences = 1.85, p = .068).

In their discussion, Zentall and Lee (2012) summarized their findings. Students with a learning disability and students with both a learning disability and ADHD were found to have improved reading achievement (comprehension and fluency). Although the students with ADHD and the nondisabled students made gains, the gains were not significant.

Positive Labeling (Feedback)

Praise is important to study, as over half of the feedback given by teachers is praise (Hyland & Hyland, 2001). The following section on praise will discuss the ways

feedback can be categorized, offer definitions and examples, and finally discuss the benefits and effects of feedback.

Types of Positive Labeling (Feedback)

Feedback has been categorized different ways by researchers. Hattie (2009, in press) uses four categories including task, process, self-regulation, and self. Feedback can be related to the task. Task feedback evaluates basic performance and whether it is correct or incorrect (Hattie, 2009, in press). Process feedback provides information on how the task was completed. The third type of feedback is self-regulation, bringing attention to the learning process. The final type of feedback is self, which is direct praise or criticism of the learner. Hattie (2009, in press) clarified that self-feedback is not feedback toward the task, process, or self-regulation. Another way to categorize feedback is praising the child as a whole or responding to the child's strategies or effort (Kamins & Dweck, 1999). They go on to explain that traits-based feedback includes comments on the child's abilities, goodness, worthiness after a task, and evaluating the whole child based on one performance.

Generic Feedback. Generic feedback can refer to both individuals and categories (Cimpian, Arce, Markman & Dweck, 2007). Researchers (Cimpian, Arce, Markman & Dweck, 2007, p. 314) give an example of generic individual feedback is "Johnny is friendly". This feedback is generic because it refers to the person rather than a specific fact or event. An example of generic categorical feedback is "Dogs are friendly". Researchers (Cimpian, Arce, Markman & Dweck, 2007, p. 314) change the generic

person feedback to specific feedback by saying "Johnny is nice at the party". Simply wording of feedback can change it from generic "You are a good drawer" to specific "You did a good job on that drawing" (Kamis & Dweck, 1999). Research (Brophy, 1981) established this concept, finding that the quantity of teacher praise is less important than its quality.

Effects of Feedback

There are multiple benefits of giving feedback to students. Feedback effects student motivation, reading, self-concept, and persistence. Feedback (enactive mastery, vicarious experiences, and verbal persuasion) has been found to increase motivation (Margolis & McCabe, 2006). Research supports improvements in motivation and reading achievement for all students who receive performance feedback (Ardoin, Morena, Binder, & Foster, 2013; Watson, Fore, & Boon, 2009). Specific feedback has been found to improve reading prosody and fluency for students with disabilities (Ardoin, Morena, Binder, & Foster, 2013; Guzel-Ozmen, 2011; Watson, Fore, & Boon, 2009). Specific feedback has also been proven to increase student's self-concept, self-efficacy (confidence), and persistence (Margolis & McCabe, 2006; Zentall & Morris, 2010). Self-efficacy is important in reading, as studies (Guthrie, Kauda & Ho, 2013; Logan & Medford, 2011) show a positive correlation to reading skills and reading performance (Naeghel, Van Keer, Vansteenkiste & Rosseel (2012).

Dweck and Kamins noted research (Dweck, 1999; Kamins & Dweck, 1999) studied the effect feedback (both praise and criticism) has on a child's future coping with

setbacks. In their study (Cimpian, Arce, Markman & Dweck, 2007) using 4-year olds in a pretend play experiment, person feedback and process feedback were given. There was no difference for students regarding feedback. This led researchers (Cimpian, Arce, Markman & Dweck, 2007) to conclude that both types of feedback (person and process) were equally rewarding. In their comments, Cimpian, Arce, Markman and Dweck (2007) stated that children who received generic praise were more likely to have strong emotional reactions, whereas students who received nongeneric praise were more likely to have better strategies for correcting their mistakes.

Kamins and Dweck (1999) studied seventy-five kindergartners to role-play four scenarios. During the scenarios, participants would play out the scenario, make an error, and then receive feedback from the teacher. The study used four feedback conditions including person criticism, outcome criticism, process criticism, and no feedback. The study found that a set of feedback experiences influences one's response to setback. Feedback influenced the child's self-conceptions of their attributes. Feedback also influenced the child's mood. Children who received person-feedback had a more negative mood than those who received process feedback. Children in the person-feedback condition had less persistence and were less likely to offer a constructive suggestion than children in the process-criticism group. In the person-feedback condition, children agreed more strongly with the idea that badness can be determined over one event and that badness is stable over time. Kamins and Dweck (1999) concluded that person-based feedback can foster contingent self-worth resulting in

helpless behavior. The study found that outcome-based feedback that puts emphasis on the behavior or effect rather than the child itself can decrease the negative effects like helplessness and contingent self-worth.

These findings are supported by Mueller and Dweck's (1998) study with fifth grade students. In this study, participants were given either person (intelligence) or process (effort) praise, with the control group receiving no praise. The study found that students given person (intelligence) praise had more helpless behaviors such as less persistence, lower intrinsic motivation, and impaired performance than students who were given effort praise or no feedback. Both of these studies (Kamis & Dweck, 1999; Mueller & Dweck, 1998) support the theory that trait-based praise can have negative effects on future setbacks, resulting in helpless behavior and contingent self-worth attitudes. Extending these findings, (Kamis & Dweck, 1999; Mueller & Dweck, 1998) researchers (Cimpian, Arce, Markman & Dweck, 2007) found that general praise can undermine motivation.

Researchers Skipper and Douglas (2012) commented on the findings from a former study (Cimpian, Arce, Markman & Dweck, 2007), writing that the difference in nongeneric and generic praise is so slight that an individual giving feedback may not notice the difference in their speaking, let alone the implications of each form of feedback. In their study, researchers (Skipper & Douglas, 2012) identify and address a gap in the literature, which was missing data regarding educational settings. Their study involving middle school and university students explored educational outcomes

(perceptions of their performance, affect, and level of persistence) following person or process feedback. Skipper and Douglas (2012) found no differences in perceived performance, affect, and persistence for students in the three groups (personal praise, performance praise, and control group) when students were succeeding. When presented with failure, differences in outcomes occur. Students who received person (objective) praise, were not as positive in their responses as students who received process praise, however, there was little difference. Stanford University psychologist and researcher, Dweck, (2006) wrote that process praise leads to mastery response because it allows learners to develop a growth mindset. Growth mindset supports abilities and helps people learn through employing their knowledge. In contrast to Dweck's (2006) work, Skipper and Douglas (2012) found that person (objective) praise produces results similar to process praise.

Teacher actions in the classroom play an important role in improving reading motivation for students. A New Zealand case study (Fletcher, Grimley, Greenwood, & Parkhill, 2012) included students ages 10-12 to determine the reading outcomes given teacher encouragement, teacher reflections on student learning, and teachers demonstrating high realistic expectations. Although other strategies in addition to feedback were used in this study (e.g. read aloud, rich discussion, reward system, promoting books) and the results were not quantified, the teacher's actions did improve student motivation and attitudes toward reading.

Brophy (1981) developed guidelines for effective praise, as shown in Table 2. He concluded that, in addition to or instead of attempting to control student behavior through praise or other reinforcement, teachers should direct their motivational efforts toward developing their students' motivation to learn.

Effective Praise	Ineffective Praise
1. Is delivered contingently 2. Specifies the particulars of the accomplishment 3. Shows spontaneity, variety, and other signs of credibility; suggests clear attention to the student's accomplishment 4. Rewards attainment of specified performance criteria (which can include effort criteria, however) 5. Provides information to students about their competence or the value of their accomplishments 6. Orients students towards better appreciation of their own task-related behavior and thinking about problem solving 7. Uses students' own prior accomplishments as the context for describing present accomplishments 8. Is given in recognition of noteworthy effort or success at difficult (for this student) tasks 9. Attributes success to effort and ability, Implying that similar success can be expected in the future 10. Fosters endogenous attributions (students believe that hey expend effort on the task because they enjoy the task and/or want to develop task -relevant skills) 11. Focuses students' attention on their own task-relevant behavior 12. Fosters appreciation of and desirable attributions about ask-relevant behavior after the process is completed	1. Is delivered randomly or unsystematically 2. Is restricted to global positive reactions 3. Shows a bland uniformity, which suggests a conditioned response made whit minimal attention 4. Rewards mere participation, without consideration of performance processes or outcomes 5. Provides no information at al or gives students information about their status 6. Orients students toward comparing themselves with others and thinking about competing 7. Uses the accomplishments of peers as the conical for describing students' present accomplishments 8. Is given without regard to the effort expended or the meaning of the accomplishment (for this student) 9. Attributes sauces to ability alone or to external factors such as luck or easy task 10. Fosters exogenous attributions (students believe that hey expend effort on the task for external reasons to please the teacher, win a competition or reward, etc.) 11. Focuses students' attention on the teacher as an external authority figure who is manipulating them 12. Intrudes into the ongoing process, distracting attention from task-relevant behavior

Table 2*: Guidelines for Effective Praise*

Meta-analysis (Hattie & Timperley, 2007; Hattie, 2009) has shown that feedback is one of the top ten influences on learning. Hattie and Timperley (2007) propose a model for feedback based on their meta-analysis of 131 studies, 12,652 participants, and 23,664 observations. An average effect size of 0.38 was found. The most effective feedback was based on correct rather than incorrect responses and when it builds on changes from previous trials. Feedback was effective when goals are specific and challenging, but not very complex. Hattie and Timperley (2007) found praise based on task performance to be ineffective. Finally, the analysis found that feedback is more effective when there is low risk for threats to self-esteem.

Based on this meta-analysis, Hattie and Timperley (2007, p. 87) created a model for feedback (Figure 2).

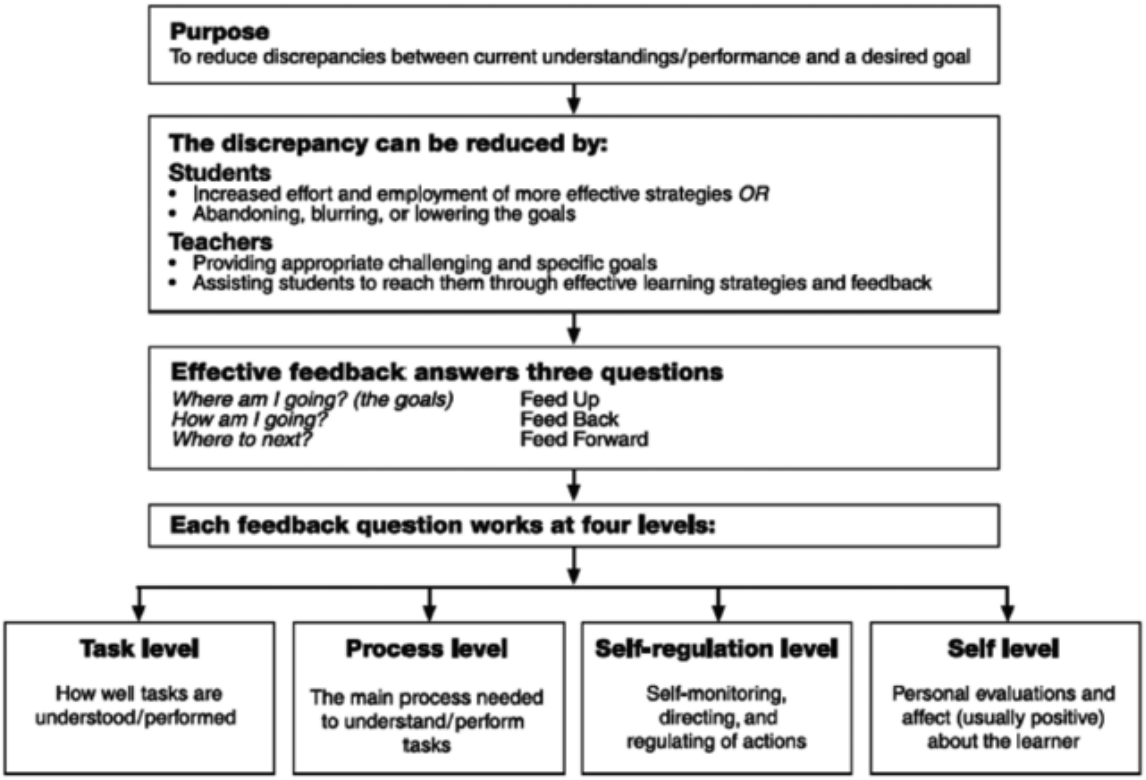

Figure 2: *A model for feedback to enhance learning*

Research has identified factors that make feedback effective. Feedback must be delivered correctly to reap its benefits. Student feedback needs to be specific and individualized (Butler, Godbole, & Marsh, 2013; Zentall & Morris, 2010). Feedback has been found to benefit motivation cross culturally when it is delivered consistently, promotes autonomy, enhances competence, does not overdo social comparisons, is scaffolded, and has attainable expectations (Zentall & Morris, 2010; El, Tillema & van

Koppen, 2012). Effective feedback states the specific behavior, is timely, succinct, sincere, and frequent (Baker, Perrault, Reid & Blanchard 2012; Chappius, 2012). Specific feedback has been proven more effective than generic praise (Butler, Godbole, & Marsh, 2013; Zentall & Morris, 2010). In fact, generic praise was found to promote helpless behaviors (Zentall & Morris, 2010) and can undermine motivation (Canella,1986; Faber & Mazlish, 1995; Henderlong and Lepper, 2002). Individualized feedback and customized interventions are necessary for success (Naeghel, Van Keer, Vansteenkiste & Rosseel, 2012). Consistent with these findings Johnston (2012), a literary studies leader, writes that subtle differences in teacher language can influence children's motivation.

There are other factors to feedback's effectiveness including student needs and teacher behaviors. Researchers El, Tillema and van Koppen (2012) postulated that feedback can be taken differently and have different impacts on intrinsic motivation, depending on students' basic motivational needs and interpersonal teacher behavior. McGeown, Norgate and Warhurst (2012) found that good readers were more likely to receive recognition for their reading skills than poor readers. It is imperative, then, for teachers to intentionally give feedback equally to all students so that all can benefit academically.

Praise has been found to improve intrinsic motivation (Anderson, Manoogian, S & Reznick, 1976). In a 2-phase field experiment including 72 lower-socioeconomic preschool children, positive verbal reinforcement resulted in increased intrinsic

motivation. This study found that positive verbal feedback was found to be more effective for the preschool students' intrinsic motivation than giving children external rewards.

Dweck's (2007) experiences with students indicate that students vary in their mindset, some believing growth is possible for them, and others do not. Dweck (2007) emphasizes from her research that students should not be praised for their intelligence. She states that a student's pride is short-lived and there are lasting negative consequences. Students develop in their growth mindset when praised for their skills, knowledge, and areas they could change through effort and learning.

Recent research (Mullaney, Carpenter, Grotenhuis, & Burianek, 2014) has found that academic feedback is most effective when it is not immediate, but delayed several seconds. Feedback can be enhanced when it is delivered soon, but when the individual is given time to anticipate the feedback, the feedback is more effective (Mullaney, Carpenter, Grotenhuis, & Burianek, 2014). This study revealed that feedback is effective when participants are curious to hear the answer and when feedback is delivered after a varied time interval. In another experimental study, (Chiu & Alexander, 2014) researchers established that immediate, corrective feedback improved five year old student performance and enhanced the meaningfulness of the activity more than the control group.

Competition

Competition is a major driving force in evolutionary theory. There are two types of competition, intraspecific and interspecific (Jr & Ness, 2013). Others have categorized it as either self-competition or social-competition (Zhi-Hong, 2014). Competition has been categorized as an extrinsic motivator. Wang & Guthrie (2004) found that geographic settings may impact the type of motivation students have (e.g. competition, curiosity), as was found between students from the United States and China.

Because of its power to motivate students and frequent classroom application, motivation is often used in educational research. Some studies have found competition to have positive effects on student learning (Cheng, Wu, Lee, 2010; Yu & Liu, 2009; Yu, Han, & Chan, 2008; Ke, 2008a; 2008b). In a study using a motivation intervention, Lee (2010) found that competition determined a variance in reading scores for good readers.

Competition could also have negative effects on student confidence and learning development (Stapesl & Koomen, 2005; Mussweiler, 2003; Gilbert, Giesler, & Morris, 1995). Based on his research, Brophy (1981) developed guidelines for effective feedback. He suggested that using competition is an ineffective way to give feedback.

One study (Cheng, Wu, Lee, 2010; Yu & Liu, 2009) successfully used a computer-based equal opportunity tactic that put students against opponents with similar abilities. This is one way to effectively use competition without overwhelming students who are not likely to be successful against higher skilled peers.

Reading Difficulty for students with ADHD

Reading comprehension data for students with ADHD have been mixed. Studies (Cherkes-Julkowski & Stolzenberg, 1991; Lorch, Milich, & Sanchez, 1998) have found that children aged 9-12 with ADHD can have reading comprehension difficulties when they must recall causal connections (A leads to B) and when reading passages that are long. Students with ADHD have reading comprehension difficulties when there are interruptions in the story sequence (e.g., excessive description, interrupted story coherence (for review, see S. S. Zentall, Cassady, & Javorsky, 2001). Miller (2013) found that students with ADHD did not do as well as their peers in retelling the central ideas of a story. Even when word reading ability is controlled, children with ADHD have difficulty building a coherent mental representation, and this difficulty is likely related to deficits in working memory (Miller, Keenan, Betjemann, Willcutt, Pennington & Olson, 2013, p. 473). Recent research (Miller et al., 2013) found that children with ADHD have difficulty building a coherent mental representation when reading. McInnes, Humphries, Hogg-Johnson, & Tannock, (2003, p. 427) found that students with ADHD were poorer than their nondisabled peers at comprehending inferences and monitoring comprehension of instructions. Students with ADHD were also found to have significantly poorer verbal working memory, spatial span, and spatial working memory than their peers (McInnes, Humphries, Hogg-Johnson, & Tannock, 2003).

There are some traits that students with ADHD do not differ from their peers. A study (McInnes, Humphries, Hogg-Johnson, & Tannock, 2003) found that students with

ADHD have similar skills as their peers such as verbal span and the ability to comprehend factual information from spoken passages.

CHAPTER 3: METHODOLOGY

Introduction

The present study continued Zentall and Lee's (2012) research, answering a call for additional research for younger students in second and third grade. Their research used a motivation intervention to improve reading achievement (comprehension and fluency) for elementary students. The purpose of this quantitative study was to examine the effect of a combined motivation intervention for learners with ADHD, learners with a learning disability, and their peers. Chapter three describes the methods used in this study.

Research Method and Design

The research method; whether quantitative, qualitative, or mixed methods, partially depends on the nature of the research problem (Bogdan & Biklen 2007). This was an experimental, quantitative study, furthering Zentall and Lee's (2012) study. A quantitive research approach was used in the present study because it emphasized gathering numerical data. The study was designed to ensure that results were objective, reliable, and generalizable to a specific population of elementary students. The present study manipulated a variable for the intervention group and compared the results to the control group to better understand a specific motivation intervention.

The present study used the experimental research method. The conditions were rigorously controlled. The participants were randomly selected from second and third grade schools and randomly assigned to intervention or control groups. The intervention

group received the intervention and the control group did not receive the intervention, a motivation intervention. All other variables such as the setting and procedures were controlled so that the degree to which the independent variable is related to the dependent variable can be examined.

Research Question

What, if any, difference exists in reading achievement between groups (students with learning disabilities in reading, ADHD, and no disability) when provided combined mastery goals feedback (intrinsic standards, positive label, extrinsic standards)?

Hypotheses

H_{1o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have no gains in reading comprehension for group a (ADHD) (Zentall & Lee, 2012).

H_{1a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading comprehension for group a (ADHD) (Zentall & Lee, 2012).

H_{2o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have no gain in reading fluency for group a (ADHD) (Zentall & Lee, 2012).

H_{2a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading fluency for group a (ADHD) (Zentall & Lee, 2012).

H_{3o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading comprehension for group b (learning disability in reading) (Zentall & Lee, 2012).

H_{3a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will improve reading comprehension for group b (learning disability in reading) (Zentall & Lee, 2012).

H_{4o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading fluency for group b (learning disability in reading) (Zentall & Lee, 2012).

H_{4a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will significantly improve reading fluency for group b (learning disability in reading) (Zentall & Lee, 2012).

H_{5o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not result in gains in reading comprehension for group c (nondisabled) (Zentall & Lee, 2012).

H_{5a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading comprehension for group c (nondisabled) (Zentall & Lee, 2012).

H_{6a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading fluency for group c (nondisabled) (Zentall & Lee, 2012).

H_{6o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading fluency for group c (nondisabled) (Zentall & Lee, 2012).

Sample

In the present study, 48 students participated. This sample size was proportionate to the sample size in the original study (Zentall & Lee, 2012) that used 80 total participants. The present study had stronger numbers for second (23) and third (24) grade. The sample size of 30 in each grade level was consistent with Zentall and Lee's (2012) sample size for third and fifth grade.

Two elementary schools from Southwest Minnesota and one elementary school from central Iowa were used for the study. The researcher does not work in any of these schools, but worked at one of the school districts. All students in second grade and third grade were asked to participate in the study. Students were randomly selected from the selected schools to participate in the study. Forty-seven second and third graders were included in this study. Students belonged to one of three groups: (a) identified as ADHD, (b) reading disabled or (c) no disabilities.

Two methods were used to determine group status. A special education database was used to determine group status (ADHD, learning disability in reading, no disability).

The schools' 504 coordinators and nurses aided in compiling a list of students with ADHD, but who are not in special education. Students who were not in the special education database listed as eligible for special education and students who were not on a 504 plan were considered nondisabled. A list was created of students who are in each group and students who do not meet any group criteria were not included in the study (See Table 3).

Learning Disability	ADHD	Nondisabled	Not Included in Study
Control Group 7 Students	Control Group 7 Students	Control Group 9 students	Students not randomly selected
Intervention Group 8 Students	Intervention Group 7 Students	Intervention Group 10 Students	Students with co-occurring disabilities Students with any other disability

Table 3: *Organization of group status*

Participants who were selected for the study were chosen carefully so that the intended generalizations were possible (Muijs, 2004). Zentall and Lee (2012) called for future research to include a higher number of second and third graders so that when

added to their research with primarily fourth and fifth graders, the results can be better generalized.

According to Mujis (2004), it is very difficult to analyze the entire population of the world, country, or subgroup, and this is why researchers use a sampling of the population. Sampling techniques will create some bias because the sample is reducing the numbers in a particular subgroup to manageable analysis of that population. Vogt (2007) wrote that a large sample size reduces the chances for both Type I and Type II internal errors. Errors that claim that an intervention is effective are Type I errors. Type I errors, for example, may reject the null hypothesis while the null hypothesis is actually true. The Type 2 error rate a "false negative" result in which the researcher concludes that the intervention was ineffective, when it really was effective. The sample should be large enough, but researchers also need to be aware of ethical implications when taking students out of class to conduct a study (Vogt, 2007). To ensure the results could be generalized over grade levels, a total of 48 second and third grade students participated in the study. Students were divided among the groups a-c, as described in *Figure 3*.

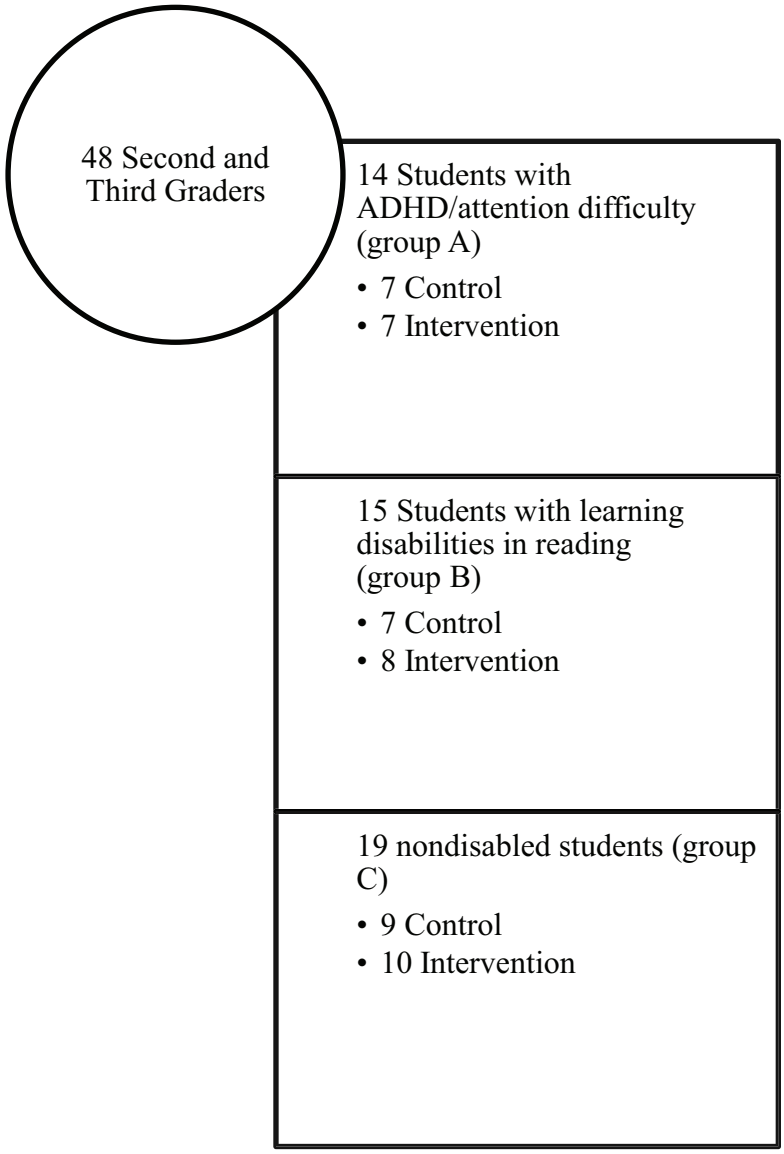

Figure 3: *Student sample*

The schools were selected so that data could be reasonably collected (Vogt, 2007). Stratified random sampling with replacement was used to obtain the students participating in the study. Stratified random sampling allowed key population

characteristics to be captured in the sample. The entire population of students with permission forms was divided into strata, groups based on their disability status. The strata was a) students with ADHD, b) students with a learning disability, c) students who are nondisabled and d) students not eligible for the study (See Table 3). Students were placed into groups and assigned a random number. Random number generating software was used to obtain the sample. True random sampling will not be possible because the disability groups are not equally represented in the full student population (Vogt, 2007).

Students identified as ADHD (group A) were previously identified by a physician, and could've been receiving or not receiving Special Education or 504 benefits. Students identified with a learning disability (group B) in reading were only those students who had been identified as such and were eligible under Minnesota Learning Disability criteria under Minnesota Rules Chapter 3525 to receive special education and related services. Students without a disability (group C) were those students who have not been identified as having a disability under any of the Minnesota criteria for Special Education and are not currently receiving any 504 services or accommodations. Any student who was randomly selected and subsequently identified as involved in a Tier 2 Response to Intervention (RTI) program or involved in a referral to special education were not included in the study. A replacement was randomly selected to replace students involved in pre-referral interventions or Tier 2 RTI interventions.

Note that the student grouping process was different in the present study than Zentall and Lee's (2012) study to better reflect the students identified as having

disabilities under state disability criteria. Zentall and Lee (2012) included students who had reading difficulties and were grouped so in RTI systems. Zentall and Lee (2012) included students who were identified by classroom teachers as being hyperactive and inattentive using the *Conners Teacher Rating Scale–Revised: Short Form* whereas the present study included only students who have been identified by a physician as having ADHD (Conners, 1997).

Setting

Research was conducted from March 2015-May 2015 in Southwest Minnesota and central Iowa at rural elementary schools.

Similar to Zentall and Lee's (2012) study, the current research took place in a private room (e.g. tutoring, testing, multipurpose) and that same room was used for all participants at that school. Rooms similar in size, location, and use were used at each school. Students were escorted to and from their classroom by the researcher in the same manner at each school.

Instrumentation and Measures

The dependent variables in the study were reading comprehension and fluency. The independent variable was the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) for the intervention group, the control group did not receive an intervention. Students took Form A of the Gray Oral Reading Test, Fifth Edition (GORT-5). The GORT-5 was used to measure pre- and post- test reading comprehension and fluency for the control and intervention groups. The GORT can be

used to measure fluency, rate, accuracy, and comprehension. For this study, the raw scores were converted to a scaled score for both reading comprehension and reading fluency.

Pro Ed gave permission to use the GORT-5 for this study on July 24, 2014 (Appendix D). A complementary testing kit was provided for the research. There are two editions of the GORT in use, both the GORT-4 and the GORT-5. Zentall and Lee (2012) used the GORT-4, the newest edition available during the study; however the publisher has developed a newer version, the GORT-5. An advantage to using the GORT-4 would be a closer replication to Zentall and Lee's (2012) study; however the GORT-5 has updates to increase reliability and validity of the test. PRO-ED (2012) developed the GORT-5 featuring updated norms, easier and more efficient administration, revised items, and new psychometrics. Because of these updates, the GORT-5 was used in this study.

The GORT-5 comes with two equivalent forms, A and B. Each form has 16 developmentally sequenced passages with five comprehension questions to follow each passage. The test is administered individually within a 15-45 minute time frame.

The *Gray Oral Reading Test* (GORT) is designed to measure five different aspects of reading: identifying students with reading difficulties, diagnosing learning disabilities in reading, determining strengths and weaknesses, evaluating student's progress in reading, and conducting research. For the purpose of this study, the GORT-5 was used to evaluate a students' progress in reading and to conduct research. Two

equivalent forms enabled the examiner to conduct pre-and post-intervention testing to measure progress. The GORT-5 is a standardized, norm-referenced test, making it suitable for use in reading research.

The GORT-5 has high content validity for this study, matching the results with the research questions and easily reaching an answer to the hypothesis. Binary classification studies indicate that the GORT-5 has high construct validity (i.e., sensitivity = .82, specificity = .86, ROC/AUC = .92, cut score =. 90 (PRO-ED, 2012). Correlations of the GORT-5 scores with those of other well-known reading measures are large or very large in magnitude, giving it high convergent validity.

The GORT-5 has high reliability and validity, making it an appropriate choice for this study. The GORT-5 was appropriate for the second and third graders in the study, developed for individuals 6 years 0 month to 23 years 11 months. The GORT-5 requires a Level B certification for administration (WPS, 2014). The researcher has Level B certification and meets the requirements due to obtaining a master's in education and formal training in the ethical administration, scoring, and interpretation of clinical assessments by the Southwest West Centeral Service Cooperative in Marshall, MN in 2007. The research assistant was also qualified at Level B and received inter-observer training and data privacy training prior to testing in March, 2015. There is an examiner's manual ensuring an inter-observer reliability on the GORT-5 and this protocol was followed for individuals collecting data. The researcher and research assistant practiced administering the test so that the same protocol was used for every participant. The same

tone and cadence was used during administration and walking students to and from the testing room. The researcher and research assistant also established answers to typical questions students may ask so that a consistent answer would be given. Both forms of the GORT-5 average internal consistency (content sampling) reliability coefficients exceed .90 (PRO-ED, Incorporated, 2012). The alternate forms reliability coefficients for the Oral Reading Index exceed .90 (PRO-ED, Incorporated, 2012). The average test-retest (time sampling) coefficients for the ORI for the same form (e.g., Form A to A, Form B to B) exceed .85 (PRO-ED, Incorporated, 2012).

A sample of the GORT-5 has not been included in the appendix due to PRO-ED's copyright restrictions, however photos and samples are available on the URL listed in the references section of the study (PRO-ED, Incorporated, 2012).

The motivation intervention was developed by Zentall and Lee (2012) and consists of three parts (a) positive feedback about prior reading performance paired with internal standards related to mastery goals, (b) positive labeling, and (c) external standards related to performance goals. The motivation intervention was scripted, but customized for the student's ceiling (Level) and peer name, "

> (a) "You did a really good job. Can you believe that you completed Level 5 of the reading task? [i.e., the ceiling the student reached] And I am thinking you can understand and complete Level 6 of the reading task this time. You did well with many correct answers."

(b) “You are a good reader. Good readers like you are good at answering questions about reading.” “I can say you are clever too. Do you know what clever is?” Yes, [repeat back what child says] and say, “a person who understands what they read and who makes few errors on questions. Who else do you know who is clever?”

(c) “I want you to read these stories and answer questions as clever or more clever than [name of this clever student]. You completed Level 5 of the reading task, and I am thinking you can understand and complete Level 6 of the reading task this time. Are you ready?”” (Zental & Lee, 2012, p. 253).

Data Collection

The Institutional Review Board (IRB) at Bethel University in St. Paul, Minnesota approved the study. This research was considered a Level 1 because the research involved children under the age of 18. Included in the IRB review is the Human Subjects Review Form (Appendix B). As a requirement of Bethel Coursework, the researcher successfully completed Research Ethics Training (Collaborative Institutional Training Initiative) and completion was verified by the Bethel Institutional Review Board Committee. The Bethel Institutional Review Board will review the Informed Consent Form (Appendix C), intervention script, and written documentation of permission from the participating schools (Appendix A). The data collection began after the IRB approves it.

A permission form (Appendix C) was sent to all of the student's guardians in second and third grade at the participating school in order for the students to participate. A second reminder was sent to nonresponsive guardians to ensure high response rate. Once permission was received from guardians, that student became eligible to be randomly selected, and placed in one of three groups.

The researcher and a research assistant, both qualified examiners, collected all of the data. Similar to Zentall and Lee's (2012) study, the current research took place in a private room (e.g. tutoring, testing, multipurpose) and that same room was used for all participants at that school. Students were escorted to and from their classroom in the same manner for each student tested. Students sat on one end of the table and the test proctor on the other side, facing the student. Students were tested individually with the same physical distance between researcher and tester for each session.

The GORT-5 was individually administered in the intended 15-45 minute window according to the GORT-5 corrected version examiner's manual (Wiederholt & Bryant, 2012). There were variations in testing time due to the number of questions required to reach a basal and ceiling. The same tone, speed, and cadence were used by both examiners for the prompts and interventions for each student to eliminate a possible limitation. Students in the control group took a 2-3 minute break following Form A and then began Form B of the GORT-5. Students in the intervention group took a 2-3 minute break following Form A, received the motivation intervention, and then began Form B of the GORT-5. Figure 5 is a summary of the individual student sessions.

Control Group	Intervention Group
1. Student escorted from class to private room. 2. GORT-5 Form A 3. 2-3 Minute Break 4. GORT-5 Form B 5. Student escorted back to class.	1. Student escorted from class to private room. 2. GORT-5 Form A 3. 2-3 Minute Break 4. Motivation Intervention 5. Gort-5 Form B 6. Student escorted back to class.

Figure 5: *Control and intervention group data collection*

Data Analysis

All students were individually administered the pre- and post-*Gray Oral Reading Test* (5th ed., GORT-5; Wiederholt & Bryant, 2001). The intervention group received the combined motivation intervention and the control group did not. Each test was scored and recorded in the Examiner Record Booklet during administration to allow for continuation of the test, according to the test examiner's manual. The researcher recorded a score for fluency (0-5 for accuracy and 0-10 for rate of reading in seconds) and comprehension (number of correct answers). Immediate scoring determined a ceiling (3 of 5 comprehension errors and a combined rate fluency score of 2 or less) and basal (5 correct responses in a row for comprehension and 9 or 10 for fluency).

Each test was scored to determine the sum of scaled scores in reading comprehension and the sum of scaled scores in reading fluency for each student in the pre- and post- tests. Scaled scores can be converted into an oral reading index and a percentile rank. Scaled scores were used in this study to stay consistent with Zentall and Lee's (2011) study.

An analysis of variance (ANOVA) was used for analyzing the data. A regression predicting fluency was run, controlling for pre-fluency. Similarly, a regression predicting comprehension was run, controlling for pre-comprehension. Initial reading ability was a covariate, because it may have had an impact on the dependent variable. Using pretest comprehension and fluency scores as a covariates reduced within-group error variance and eliminated confounds. The mean pretest and posttest scores were graphed for each group (ADHD, learning disability, and nondisabled) to compare growth from pretest to posttest in the control and intervention group.

Ethical Considerations

Ethical considerations were made in this study in accordance with the Collaborative Institutional Training Initiative (CITI) (Hicks, 2012). In this no more than minimal risk study, particular care was given to protect the children in the study according to the CITI program (Hicks, 2012). Coded IDs were used for identification of students rather than student names, which made the data untraceable to specific students. The data was stored with the encoding key kept in a different secure location. The researcher, a representative from the Center for Applied Research and Educational

Improvement, and her committee members listed in this study are the only individuals who had access to and may have viewed data. Data viewing was limited to the scope of the study and not for any other reasons. Two forms of data were produced in this study. There is a paper copy of the pre- and post-test GORT-5 protocol for each student. The second piece of data was the electronic storage of the two scores for each student, organized by group status and control versus intervention groups. Pre- and post-test data was stored in an electronic database with a password. The electronic data was stored on a computer that has up-to-date antivirus software and uses a firewall, since it has access to the internet. Data will not be stored on the cloud or with a third party. The data will be kept for two years so that it can be accessed in the future to explain or augment subsequent research and so that other researchers may evaluate or use the results. Protocol data from the GORT-5 was kept safe from physical damage as well as from tampering, loss, or theft in a lock box. All GORT-5 protocol data was properly stored and properly discarded after the completion of the study by a reputable shredding company to ensure individual privacy (Hicks, 2012).

All consent forms were approved by the Institutional Review Board (IRB) prior to recruitment. To recruit schools for participation, a letter (Appendix A) was sent to each superintendent. A follow up email or phone call ensured receipt of the letter. Each school's guidelines for conducting research at their school were followed and proper documentation was provided to the schools. Along with the formal request, informed consent forms were collected and properly documented (Appendix C). Informed consent

forms included specific information about the study and its purpose in readable language as well as all necessary components regarding potential risk and benefits of the study (Hicks, 2012).

CHAPTER 4: RESULTS

Two elementary schools from Southwest Minnesota and one elementary school from central Iowa participated in the study after attaining written permission from school leaders. All students in second grade and third grade attending the selected schools were asked to participate in the study. Students were put into one of three groups: (a) identified ADHD, (b) reading disabled or (c) no disabilities. After parent and student consent forms were received with a signature, students were randomly selected to participate in the study. Criteria as described in Chapter 3 was used to determine group status. Students who did not fit the criteria for the three groups were not included in the study. Forty-seven second and third graders participated in this study. Chapter 4 will list each hypotheses and use data to determine the answer to the research question: What, if any, difference exists in reading achievement between groups (students with ADHD, students with a learning disabilitiy, and no disability) when provided combined mastery goals feedback (intrinsic standards, positive label, extrinsic standards)? The chapter concludes with a summary table of all hypotheses and findings.

Hypotheses and Results

H_{1o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have no gains in reading comprehension for group a (ADHD) (Zentall & Lee, 2012).

H_{1a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading comprehension for group a (ADHD) (Zentall & Lee, 2012).

A regression was run predicting post comprehension for students with ADHD while controlling for pretest reading fluency. Table 6 indicates that the coefficient was B=1.557 which was not significant (p >.05) above and beyond the pretest score. The null hypothesis is accepted.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.267	2.699		-.470	.647
	PreComprehension	1.054	.227	.802	4.650	.001
2	(Constant)	-4.149	3.328		-1.247	.238
	PreComprehension	1.091	.220	.830	4.960	.000
	Group_cat	1.557	1.122	.232	1.388	.193

a. Dependent Variable: PostComprehension

Table 4: *Regression predicting post comprehension for students with ADHD*

H_{3o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading comprehension for group b (learning disability in reading) (Zentall & Lee, 2012).

H_{3a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will improve reading comprehension for group b (learning disability in reading) (Zentall & Lee, 2012).

A regression was run predicting post comprehension for students with a learning disability while controlling for pretest reading fluency. Table 7 indicates that the coefficient was B= -.542 which was not significant (p >.05) above and beyond the pretest score. The null hypothesis is accepted.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.568	1.508		1.040	.317
	PreComprehension	.799	.182	.772	4.385	.001
2	(Constant)	2.192	1.989		1.102	.292
	PreComprehension	.825	.195	.798	4.234	.001
	Group_cat	-.542	1.079	-.095	-.502	.625

a. Dependent Variable: PostComprehension

Table 5: *Regression predicting post comprehension for learning disabled students*

H_{5o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not result in gains in reading comprehension for group c (nondisabled) (Zentall & Lee, 2012).

H_{5a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading comprehension for group c (nondisabled) (Zentall & Lee, 2012).

A regression was run predicting post comprehension for nondisabled students while controlling for pretest reading fluency. Table 8 indicates that the coefficient was B= -1.023 which was not significant (p >.05) above and beyond the pretest score. The null hypothesis is accepted.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.048	2.186		.022	.983
	PreComprehension	1.059	.187	.809	5.677	.000
2	(Constant)	3.347	2.637		1.269	.223
	PreComprehension	.910	.189	.695	4.814	.000
	Group_cat	-1.023	.524	-.282	-1.953	.069

a. Dependent Variable: PostComprehension

Table 6: *Regression predicting post comprehension for nondisabled students*

The data was run to determine the impact of the intervention compared to the control group for reading fluency for each of the three groups of students using means, as shown in Figure 6. Mean scores in Figure 6 are scaled scores from the Gray Oral Reading Test-5. Scale scores range from 1 (lowest reading score) to 20. Given this analysis, the intervention groups did not make more gains in comprehension than the control group.

Students with ADHD did better in the intervention group, but these gains were not significant. The null hypothesis is accepted.

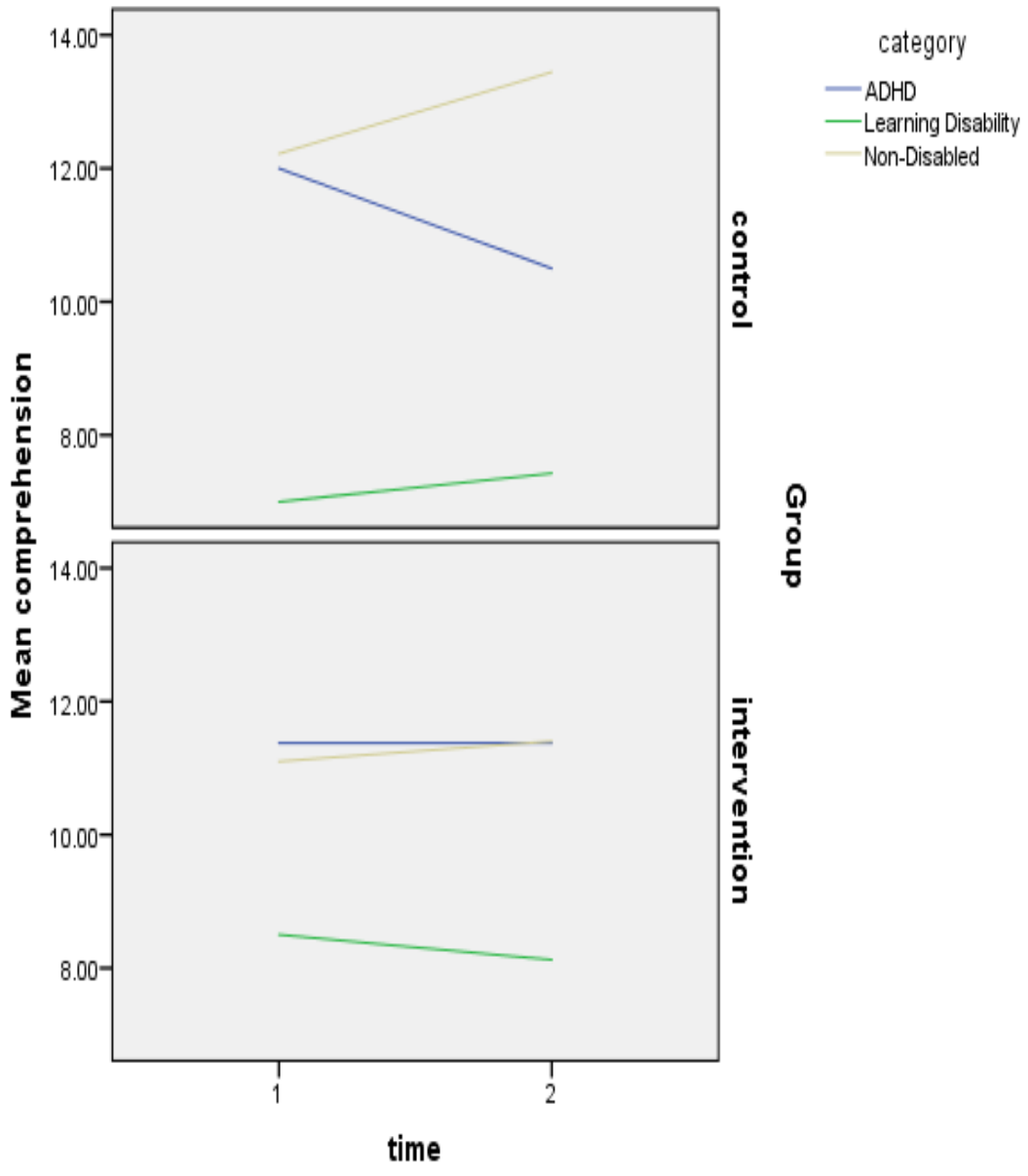

Figure 6: Control group mean comprehension scores compared to intervention group

H_{2o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have no gain in reading fluency for group a (ADHD) (Zentall & Lee, 2012).

H_{2a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading fluency for group a (ADHD) (Zentall & Lee, 2012).

A regression was run predicting post fluency for students with ADHD while controlling for pretest reading fluency. Table 9 indicates that the coefficient was B= -.487 which was not significant (p >.05) above and beyond the pretest score. The null hypothesis is accepted.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.683	1.853		-1.447	.173
	PreFluency	1.380	.189	.904	7.310	.000
2	(Constant)	-1.646	2.893		-.569	.581
	PreFluency	1.352	.204	.885	6.623	.000
	Group_cat	-.487	1.019	-.064	-.478	.642

a. Dependent Variable: PostFluency

Table 7: *Regression predicting post fluency for students with ADHD*

H_{4o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading fluency for group b (learning disability in reading) (Zentall & Lee, 2012).

H_{4a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will significantly improve reading fluency for group b (learning disability in reading) (Zentall & Lee, 2012).

A regression was run predicting post fluency for students with a learning disability while controlling for pretest reading fluency. Table 10 indicates that the coefficient was B=.071 which was not significant (p >.05) above and beyond the pretest score. The null hypothesis is accepted.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.838	.531		1.579	.138
	PreFluency	.926	.072	.963	12.798	.000
2	(Constant)	.725	.832		.872	.401
	PreFluency	.927	.075	.963	12.308	.000
	Group_cat	.071	.389	.014	.183	.858

a. Dependent Variable: PostFluency

Table 8: *Regression predicting post fluency for students with a learning disability*

H_{6a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading fluency for group c (nondisabled) (Zentall & Lee, 2012).

H_{6o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading fluency for group c (nondisabled) (Zentall & Lee, 2012).

A regression was run predicting post fluency for nondisabled students while controlling for pretest reading fluency. Table 11 indicates that the coefficient was B= -.806 which was not significant (p >.05) above and beyond the pretest score. The null hypothesis is accepted.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.523	1.299		.403	.692
	PreFluency	.991	.114	.903	8.687	.000
2	(Constant)	2.607	1.716		1.519	.148
	PreFluency	.915	.116	.834	7.857	.000
	Group_cat	-.806	.464	-.184	-1.737	.102

a. Dependent Variable: PostFluency

Table 9: *Regression predicting post fluency for nondisabled students*

The data was also run to determine the impact of the brief verbal intervention compared to the control group for reading fluency for each of the three groups of students using means, as shown in Figure 7. Mean scores in Figure 7 are scaled scores from the Gray Oral Reading Test-5. Scale scores range from 1 (lowest reading score) to 20. Given this analysis, the intervention group did not make more gains in fluency than the control group. The null hypothesis is accepted.

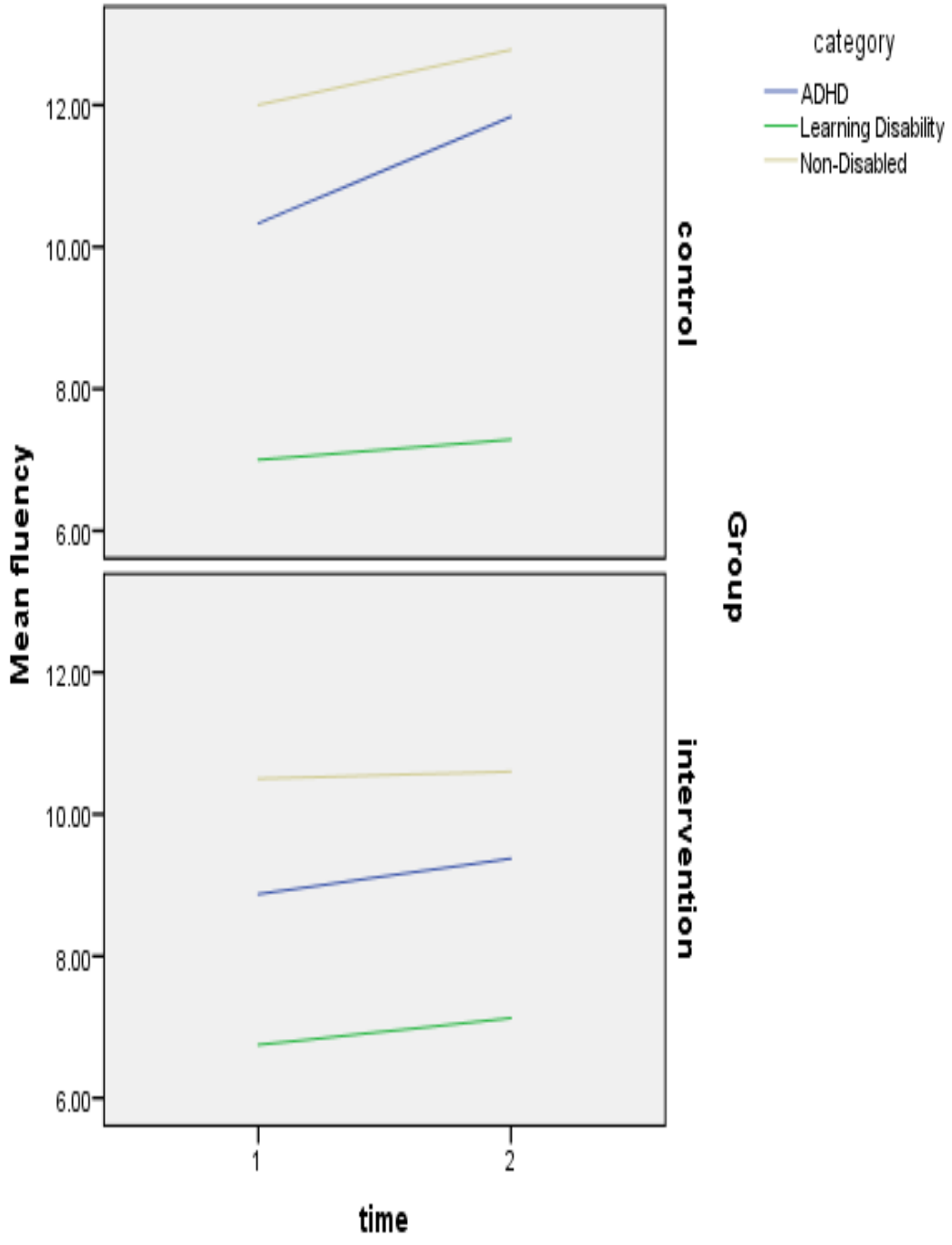

Figure 7: *Control group mean fluency scores compared to intervention group*

The data was again analyzed so that raw numbers of individual students who made progress in reading fluency could be accounted for. Table 12 displays the raw number of students and the percentage of students who responded to the intervention with improved reading fluency scores compared to students who did not improve fluency scores in Table 13. There were more students with ADHD or a learning disability who improved their scores given the motivation intervention than students who did not receive the motivation intervention. Nondisabled students in the intervention group did not have higher fluency scores than the control group.

Students who Improved Fluency Scores in Intervention Group			
	Group A ADHD	Group B Learning Disability	Group C Nondisabled
Number of Students	5	4	2
Percentage	62.5%	50%	20%

Table 10: *Frequency of Students who Improved Reading Fluency Scores*

Students who Improved Fluency Scores in Control Group			
	Group A ADHD	Group B Learning Disability	Group C Nondisabled
Number of Students	3	1	5
Percentage	50%	14.29%	50%

Table 11: *Frequency of Students who Improved Reading Fluency Scores*

The data was also analyzed for comprehension so that raw numbers of individual students who made progress could be accounted for. Table 14 displays the raw number of students and the percentage of students who responded to the intervention with improved reading comprehension scores compared to students who did not improve comprehension scores in Table 15. There were more students with ADHD and students with a learning disability who improved their scores given the motivation intervention than students who did not receive the motivation intervention. Nondisabled students in the intervention group did not have higher comprehension scores than the control group.

Students who Improved Comprehension Scores in Intervention Group			
	Group A ADHD	Group B Learning Disability	Group C Nondisabled
Number of Students	4	3	4
Percentage	50%	37.5%	40%

Table 12: *Frequency of Students who Improved Reading Comprehension Scores*

Students who Improved Comprehension Scores in Control Group			
	Group A ADHD	Group B Learning Disability	Group C Nondisabled
Number of Students	2	2	7
Percentage	33.33%	29%	70%

Table 13: *Frequency of Students who Improved Reading Comprehension Scores*

In summary of the data collection results, Table 16 lists all of the hypotheses in this paper and whether the researcher was able to reject or not reject the null. For all of

the six research questions, the researcher was unable to reject the null due to B values that were not significant and lack of an effect size.

Hypotheses	Null Rejected
H_{1o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have no gains in reading comprehension for group a (ADHD) (Zentall & Lee, 2012).	Accepted
H_{1a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading comprehension for group a (ADHD) (Zentall & Lee, 2012).	Rejected
H_{2o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have no gain in reading fluency for group a (ADHD) (Zentall & Lee, 2012).	Accepted
H_{2a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading fluency for group a (ADHD) (Zentall & Lee, 2012).	Rejected
H_{3o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading comprehension for group b (learning disability in reading) (Zentall & Lee, 2012).	Accepted
H_{3a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will improve reading comprehension for group b (learning disability in reading)	Rejected

(Zentall & Lee, 2012).	
H_{4o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading fluency for group b (learning disability in reading) (Zentall & Lee, 2012).	Accepted
H_{4a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will significantly improve reading fluency for group b (learning disability in reading) (Zentall & Lee, 2012).	Rejected
H_{5o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not result in gains in reading comprehension for group c (nondisabled) (Zentall & Lee, 2012) (Zentall & Lee, 2012).	Accepted
H_{5a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading comprehension for group c (nondisabled) (Zentall & Lee, 2012).	Rejected
H_{6a}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have a gain in reading fluency for group c (nondisabled) (Zentall & Lee, 2012).	Accepted
H_{6o}: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve reading (Zentall & Lee, 2012).	Rejected

Table 14: *Hypotheses*

CHAPTER 5: DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Overview of the Study

The present study intended to explore a motivational intervention for its impact on students with ADHD or a learning disability and compare those results to nondisabled peers. Forty-seven second and third grade students from rural Midwestern states in America were randomly assigned to intervention and control groups in a pre- and post-test reading assessment. Students in the intervention group were given a verbal, 3-minute combined motivation intervention (intrinsic standards, positive label, extrinsic standards) in order to improve posttest fluency and comprehension scores.

Research Question

What, if any, difference exists in reading achievement between groups (students with a learning disability in reading, ADHD, and no disability) when provided combined motivation intervention (intrinsic standards, positive label, extrinsic standards)?

Conclusions

Data was analyzed to determine whether the mean comprehension or fluency scores of students improved given the intervention. Students in all three groups (learning disability, ADHD, and no disability) did not show significant gains in the intervention group compared to the control group.

A regression analysis was also run to determine whether the intervention was significant above and beyond the pretest score. In both fluency and comprehension

measures, students in all three groups (learning disability, ADHD, and no disability) did not demonstrate significant improvements.

Lastly, the data was analyzed by examining individual students to determine how many of them improved their fluency or comprehension scores on the posttest. Although 26% of the students in all three groups improved their scores on either test, there were 25 students who improved their scores given the motivation intervention.

The data was also analyzed so that raw numbers of individual students who made progress could be accounted for. Results were similar for both fluency and comprehension with findings indicating that more students with ADHD improved their scores in the intervention group than students in the control group. There were also more students with a learning disability who improved their fluency and comprehension scores in the intervention group than students in the control group. Nondisabled students did not do better in the intervention group for fluency or comprehension.

Implications

A brief verbal combined motivation intervention may improve fluency and comprehension scores for students with ADHD and for students with a learning disability, however when the data from the present study was analyzed using mean scores and coefficients, there is no significance between pretest and posttest scores. In order to determine if the motivation intervention produces significant changes in reading, a larger sample size would be necessary (Informer Technologies, Inc., 2015).

Recommendations for Practitioners

Motivation is critical in education as well as real life (Zhao, 2009). Motivation has been considered a major factor in reading success and studies have shown that students with a learning disability have been found to have lower levels of motivation and decreasing levels of motivation over time (Baker & Wigfield 1999; Chapman & Timmer 1995; Lee, 2010; Melekoglu & Wilkerson, 2013). Motivation interventions to improve reading performance are beneficial for students with learning or attention difficulties.

The researcher observed a noticeable effect of the intervention compared to the control group. All students were more attentive and put forth more effort immediately following the motivation intervention. Students from each category (ADHD, learning disabled, nondisabled) would often smile and sit up straighter, placing their body so that they could see better and work faster. This observation is consistent with previous findings that specific feedback increases student's self-concept, self-efficacy (confidence), and persistence (Margolis & McCabe, 2006; Zentall & Morris, 2010). The researcher also observed that students who were fidgety or losing interest were able to re-focus on the reading task after the motivation intervention.

Since the motivation intervention used in this study was brief and requires little training to implement, it would be an effective way to give students a motivational boost. Paraprofessional staff could be easily trained to use this intervention. The motivation intervention did not have lasting effects over several passages. Educators could use the motivation intervention for a short reading task lasting less than 10 minutes. Another

suggestion is for educators to give the students additional reminders of the motivation intervention periodically during reading tasks. This brief verbal motivation intervention could be used for students who struggle with reading comprehension and fluency in a Response to Intervention program.

Recommendations for Academics

There is a need to study the impact of motivation interventions on reading achievement for students with learning disabilities (Norgate & Warhurst, 2012; Zentall & Belke, 2012). The present study demonstrates the continued need for additional studies, especially with larger populations of students.

The motivation intervention could be more successful with some modifications. The motivation intervention in the present study is brief and could be more effective paired with a shorter reading task or delivered more frequently throughout the reading task. The motivation intervention used was verbal and could be paired with a visual or a gesture, especially throughout a longer reading task.

The purpose of this study was to determine whether a combined (intrinsic standards, positive label, and extrinsic standards) motivation intervention would have an impact on student's (ADHD, learning disabled, nondisabled) reading ability (fluency and comprehension). The study was not designed to determine the effect of each motivational component. In future research it would be useful to determine the effect of intrinsic standards, positive label, and extrinsic standards on reading achievement for each of the three groups of students.

In future research, it would be beneficial to explore any differences in student enjoyment, motivation levels, effort, and self-concept in the intervention group compared to the treatment group.

Concluding Comments

In this study, the researcher observed that students respond positively to a combined motivation intervention while reading. The motivation intervention was observed to be welcomed by students because it gave students a break while delivering specific feedback. Student task enjoyment and effort appeared to improve following the motivation intervention compared to students in the control group, who continued the reading task obediently rather than with enthusiasm.

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Appendix A

Permission to Conduct Research Study

Date
Superintendent of Schools
Address
RE: Permission to Conduct Research Study

Dear Superintendent of Schools:

I am writing to request permission to conduct a research study at your school. I am currently enrolled in the Educational Leadership Program at Bethel University in St. Paul, MN, and am in the process of writing my Doctoral Dissertation. The study is entitled The Impact of a Combined Motivation Intervention on Reading Comprehension.

I am requesting approval to recruit 40 random second and third grade students to anonymously participate in the study. Selected students will be given a consent form to be signed by their parent or guardian (copy enclosed) and returned to the researcher prior to participation in the study.

If approval is granted, student participants will receive the pre- and post- test in a

resource room or other quiet setting on the school site, as designated by your school.

Control Group	Intervention Group
1. Gray Oral Reading Test-5 Form A 2. 2-3 Minute Break *3. Gray Oral Reading Test* -5 Form B	1. *Gray Oral Reading Test* -5 Form A 2. 2-3 Minute Break 3. Motivation Intervention 4. *Gray Oral Reading Test* -5 Form B

I would like permission to test each student individually during the school day, with each session taking 20-40 minutes. The results of the study will be pooled for the dissertation project and individual results of this study will remain absolutely confidential and anonymous. Should this study be published, only pooled results will be documented. No costs will be incurred by either your school/center or the individual participants.

Your approval to conduct this study will be greatly appreciated. I will follow up with a telephone call next week and would be happy to answer any questions or concerns that you may have at that time. You may contact me at my email address:alienig@redwoodareaschools.com.

If you agree to participate, kindly sign below and return the signed form in the enclosed self-addressed envelope.

Sincerely,

Alanna Lienig, Bethel University

Approved by:

_____	_____	_____
Print your name and title here	Signature	Date

Appendix B

Human Subjects Review Form

For office use only:

Code number _____ Action:
Date reviewed _____

Request for Approval of Research with Human Participants

In Social and Behavioral Research

Institutional Review Board for Research with Humans

Bethel University

P.O. Box 2322

3900 Bethel Drive

St. Paul, MN 55112

College and Federal policies require that each project involving studies on humans be reviewed to consider 1) the rights and welfare of the individuals involved; 2) the appropriateness of the methods used to secure informed consent; and 3) the risk and potential benefits of the investigation. Bethel has a three-level review structure, such that not all research proposals need to come to the IRB committee. The levels of review and

their associated criteria may be viewed on Bethel's website. **Research may not be initiated prior to formal, written approval by the appropriate committee or person.**

The information on the following pages is necessary for review. Answer each item thoroughly, and put N/A for those that do not apply. Label each piece of information by section letter (A – G), item number (1, 2, etc.), and the boldface headers for each item. **Proposals lacking information will be returned without review**. Attach your typewritten pages to this cover sheet.

Submit the completed form to the committee, either at the above address or, if this is Bethel student research, to your research advisor. You *will not* receive this proposal back, so be sure you keep a copy of the materials you submit. You will be notified by letter of the committee's decision.

A. Identifying Information

1) **Date 11/3/2014**

2) **Principal Investigator** –

   Alanna Lienig, Education Department – Bethel University.

   3900 Bethel Drive St. Paul, MN 55112 PO #14

   Ph# 612-670-6825

   lienig@newulmtel.net

3) **Co-investigators** – N/A

4) **Project Title**

   A Reading Motivation Intervention with Differential Outcomes for

Students with Learning disabilities in reading, Students with ADHD, and Their Peers

5) **Key Words** – special education, disability, reading comprehension, motivation, ADHD, learning disability
6) **Inclusive Dates of Project** – February 2014-Mardch 2014
7) **Research Advisor** –

   Katie Bonawitz Ed.D., Education Department – Bethel University.

   3900 Bethel Drive St. Paul, MN 55112 PO #14

   Ph# 612-670-6825

   katie-bonawitz@bethel.edu
8) **Funding Agency** – N/A
9) **Investigational Agents** – N/A

B. Participants

1) **Type of Participants** – Students grades 2 and 3 who are (learning disabled, have ADHD, or are not disabled)
2) **Institutional Affiliation** – Students will be from Reede Gray Elementary School for the study and St. John Lutheran School for the pilot study.
3) **Approximate Number of Participants** 60 in the study and 10 in the pilot study
4) **How Participants are Chosen** –

   A school from Southwest Minnesota will be used for the study. The researcher does not work at this school, but in the district. Students will be randomly

selected from the selected schools to participate in the study. Sixty second and third graders will be included in this study. Students will belong to one of three groups: (a) identified as ADHD, (b) reading disabled or (c) no disabilities. Students with co-occurring disabilities will be excluded from the study. Equal groups will be created, with 20 students in each group (10 control, 10 intervention), half from second grade and half from third grade. When a group is full from random selection, replacement will be used to come to equal numbers.

Two methods will be used to determine group status. A special education database will be used to determine which group students belong to (ADHD, learning disability in reading, no disability). This database will determine whether a child has a learning disability, has ADHD and is eligible for special education services, or is nondisabled. The school's 504 coordinator will aid in compiling a list of students with ADHD, but who are not in special education. Students who are not in the special education database listed as eligible for special education and students who are not on a 504 plan will be considered nondisabled. A list will be created of students who are in each group and students who do not meet any group criteria will not be included in the study (See Figure 3).

5) How Participants are Contacted –

A permission form (Appendix C) will be sent electronically to each of the student's guardians in second and third grade at the participating school in order for randomly selected students to participate. If needed, a second reminder will be sent to guardians to ensure high response rate. Once permission is received from guardians, that student will be eligible to be randomly selected, and placed in one of three groups.

6) **Inducements** – N/A

7) **Monetary Charges** – N/A

C. Informed Consent – A parent/guardian signature will be collected for all participants before the research takes place. The informed consent form is attached to this file and is located in Appendix C in the study.

D. Abstract and Protocol

1) **Hypotheses and Research Design** –

1. What, if any, difference exists in reading achievement between groups (students with a learning disability in reading, ADHD, and no disability) when provided combined motivation intervention (intrinsic standards, positive label, extrinsic standards)?

Hypotheses

H1o: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic

standards) will have no gains in comprehension and fluency for group a (ADHD) (Zentall & Lee, 2012).

H1a: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have modest gains in comprehension and fluency for group a (ADHD) (Zentall & Lee, 2012).

H2o: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve the fluency and comprehension for group b (learning disability in reading).

H2a: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will significantly improve the fluency and comprehension for group b (learning disability in reading).

H3o: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not result in gains in comprehension and fluency for group c (nondisabled) (Zentall & Lee, 2012).

H3a: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will have

modest gains in comprehension and fluency for group c (nondisabled) (Zentall & Lee, 2012).

H4o: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will not improve the fluency and comprehension for group d (learning disability in reading and ADHD).

H4a: After controlling for initial reading differences, the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) will significantly improve the fluency and comprehension for group d (learning disability in reading and ADHD).

This is an experimental, quantitative study, furthering Zentall and Lee's (2012) study. There will be a pre-test, intervention, and post-test for students in the intervention group and a pre-test and post-test for students in the control group.

2) **Protocol** –

Setting

Research will be conducted from December 2014-January 2015 in Southwest Minnesota at a rural elementary school.

Similar to Zentall and Lee's (2012) study, the current study will take place in a private room (e.g. tutoring, testing, multipurpose) and that same room will be used for all participants at that school. Similar rooms will be used at each school.

Students will be escorted to and from their classroom in the same manner for each student tested.

Instrumentation and Measures

The dependent variables in the study are reading comprehension and fluency. The independent variable is the combined motivation intervention (intrinsic standards, positive label, and extrinsic standards) for the intervention group, the control group receiving no intervention. Students will take Form A of the Gray Oral Reading Test, Fifth Edition (GORT-5). The GORT-5 will be used to measure pre- and post- test reading comprehension and fluency for the control and intervention groups. The GORT can be used to measure fluency, rate, accuracy, and comprehension. For this study, the Oral Reading Index will be used; a composite score formed by combining students' Fluency and Comprehension scaled scores.

The GORT-5 comes with two equivalent forms, A and B. Each form has 16 developmentally sequenced passages with five comprehension questions to follow each passage. The test is administered individually within a 15-45 minute time frame.

The *Gray Oral Reading Test* (GORT) is designed to measure five different aspects of reading: identifying students with reading difficulties, diagnosing learning disabilities in reading, determining strengths and weaknesses, evaluating student's progress in reading, and conducting research. For the purpose of this

study, the GORT-5 will be used to evaluate a students' progress in reading and to conduct research. Two equivalent forms will enable the examiner to conduct pre- and post-intervention testing to measure progress. The GORT-5 is a standardized, norm-referenced test, making it suitable for use in reading research.

The motivation intervention was developed by Zentall and Lee (2012) and consists of three parts (a) positive feedback about prior reading performance paired with internal standards related to mastery goals, (b) positive labeling, and (c) external standards related to performance goals. The motivation intervention is scripted, but customized for the student's ceiling (Level) and peer name, "

(a) "You did a really good job. Can you believe that you completed Level 5 of the reading task? [i.e., the ceiling the student reached] And I am thinking you can understand and complete Level 6 of the reading task this time. You did well with many correct answers."

(b) "You are a good reader. Good readers like you are good at answering questions about reading." "I can say you are clever too. Do you know what clever is?" Yes, [repeat back what child says] and say, "a person who understands what they read and who makes few errors on questions. Who else do you know who is clever?"

(c) "I want you to read these stories and answer questions as clever or more clever than [name of this clever student]. You completed Level 5 of the reading task, and

I am thinking you can understand and complete Level 6 of the reading task this time. Are you ready?"" (Zental & Lee, 2012, p. 253).

Participants will not be debriefed regarding the nature of the study, but their parent/guardian will receive information regarding the purpose of the study.

E. Risks –

1) **Privacy** –

The information being analyzed in the study will be provided solely by the participants. Names of the students, the school they attend, and their group status (ADHD, learning disabled, or nondisabled) will be changed in order to insure anonymity. The only identifying characteristic will be the name of the region or area where the school resides and what age range of children the school serves (Southwest Minnesota; Rural District). Upon completion of this study, all personal information will be destroyed (both digitally formats and hard copies).

2) **Physical stimuli** – No known risk identified.
3) **Deprivation** – No known risk identified.
4) **Deception** – No known risk identified.
5) **Sensitive information** – The GORT-5 does not contain any sensitive information. Personal/Sensitive information may be in the motivation intervention listed above, but it is very positive and uplifting rather than having a negative connotation. As noted earlier, all identifying information will be changed in order to protect the

participants. Parents/guardians of participants will know the topic in advance and will be able to determine if they want to participate.

6) **Offensive materials** – No known risk identified.
7) **Physical exertion** – No known risk identified.

F. Confidentiality – A test examiner protocol will be created for each participating student. Any identifying characteristics will be changed in order to insure anonymity. The investigator will collect, maintain, use and destroy all protocol materials. Destruction of all hard copy materials will take place through a reputable shredding company. Destruction of all digital materials will take place with the help of an IT expert at Bethel University.

G. Signatures –

"I certify that the information furnished concerning the procedures to be taken for the protection of human participants is correct. I will seek and obtain prior approval for any substantive modification in the proposal and will report promptly any unexpected or otherwise significant adverse effects in the course of this study."

Appendix B Addendum

Human Subjects Review Form

A research assistant will be used to assist with data collection. The research assistant is a qualified test examiner and has been trained in administering the GORT-5. In addition to being trained in the GORT-5, the research assistant has been trained on administering the motivation intervention. The research assistant will follow the same data privacy procedures as the researcher and will not be retaining any of the test booklets.

Appendix C

Consent Forms

Your child has been invited to participate in a study of reading motivation. I hope to learn whether a motivation intervention including intrinsic standards, positive label, and extrinsic standards improves reading comprehension. Your child was selected as a possible participant in this study because he/she is a second or third grader at one of the schools in this study. This research is being conducted as part of a doctoral dissertation at Bethel University.

If you decide to participate, your child will be randomly placed in the intervention or control group. Forms A and B of the Gray Oral Reading Test, Fifth Edition will be individually administered by the researcher, each session lasting 20-40 minutes. Students will miss class time to participate in the study.

Any information obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission. In any written reports or publications, no one will be identified or identifiable and only aggregate data will be presented.

Your decision whether or not to participate will not affect your future relations with your elementary school in any way. If you decide to participate, you are free to discontinue participation at any time without affecting such relationships.

You are making a decision whether or not to participate. Your signature indicates that you have read the information provided above and have decided to participate. You may withdraw at any time without prejudice after signing this form should you choose to discontinue participation in this study.

_____ _____

Signature Date

_____ _____

Signature of Parent or Guardian Date

_____

Signature of Investigator

Appendix C Continued

Study Title: A Reading Motivation Intervention with Differential Outcomes for Students with Learning disabilities in reading, Students with ADHD, and Their Nondisabled Peers.

My name is Alanna Lienig. I am from Bethel University. You are invited to participate in a research study. Below are some answers to question you may have about this study.

What is it for?

- This project may help other students be better readers.

Why me?

- You are a second or third grader at the school I have chosen.
- I do not believe that you will be hurt or upset by being in this study.

What will I have to do?

- You will be asked to read some short passages for me.
- I may tell you some things that could improve your reading.

Did my parents say it was Okay?

- Yes

What if I want to quit?

- If you or change your mind, you do not have to be in the study.
- If you decide to quit or stay in the study, your grades will not be changed in any way.

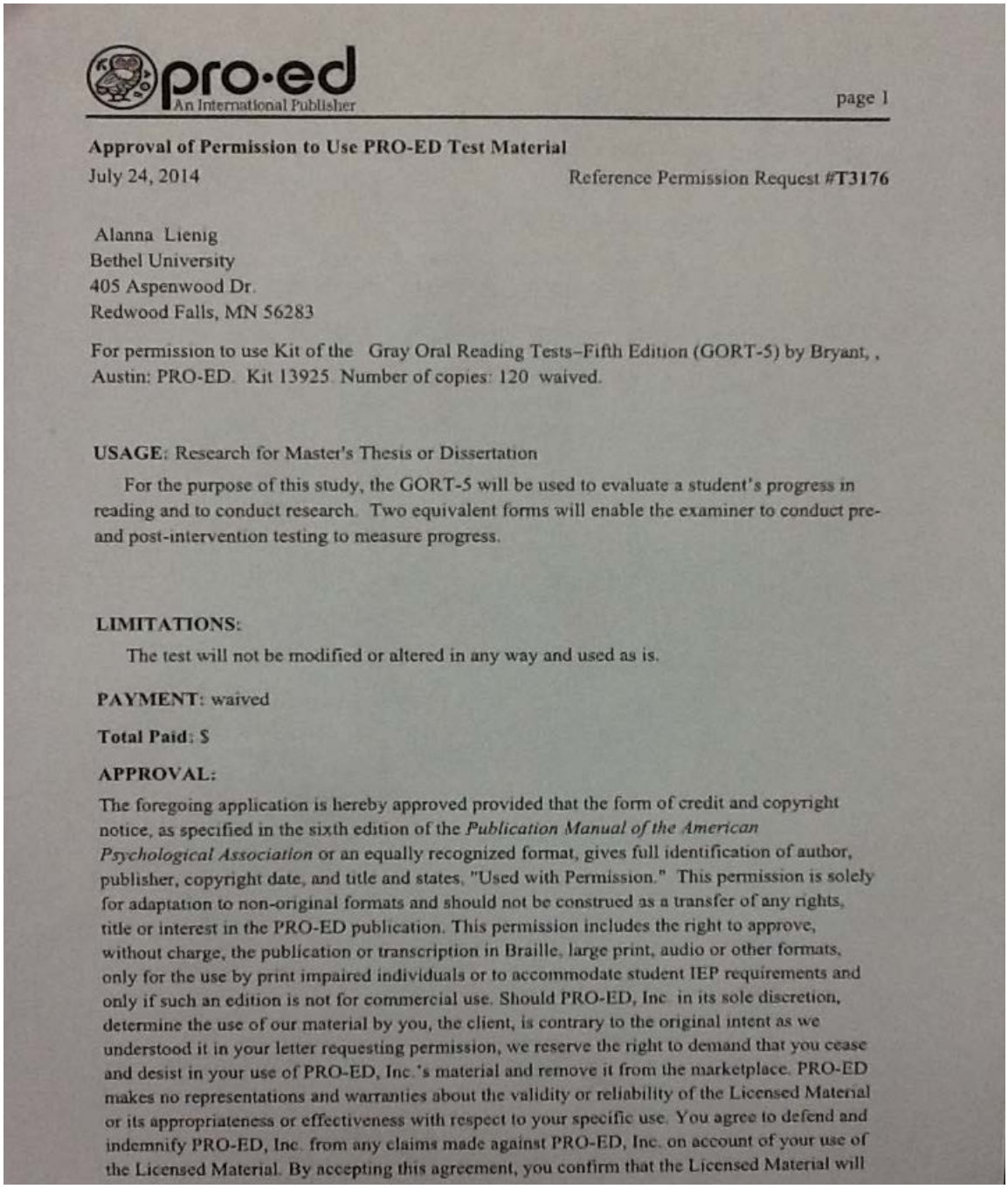
By signing below, I am saying that I have read this form and have asked any questions I may have. All of my questions have been answered and I understand what I am being asked to do. By signing I am saying that I am willing and would like to participate in this study.

_____ _____

Signature of student Date

Appendix D

Permission to Use the GORT-5



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Approval of Permission to Use PRO-ED Test Material

July 24, 2014 Reference Permission Request #**T3176**

Alanna Lienig
Bethel University
405 Aspenwood Dr.
Redwood Falls, MN 56283

For permission to use Kit of the Gray Oral Reading Tests–Fifth Edition (GORT-5) by Bryant, , Austin: PRO-ED. Kit 13925. Number of copies: 120 waived.

USAGE: Research for Master's Thesis or Dissertation

For the purpose of this study, the GORT-5 will be used to evaluate a student's progress in reading and to conduct research. Two equivalent forms will enable the examiner to conduct pre- and post-intervention testing to measure progress.

LIMITATIONS:

The test will not be modified or altered in any way and used as is.

PAYMENT: waived

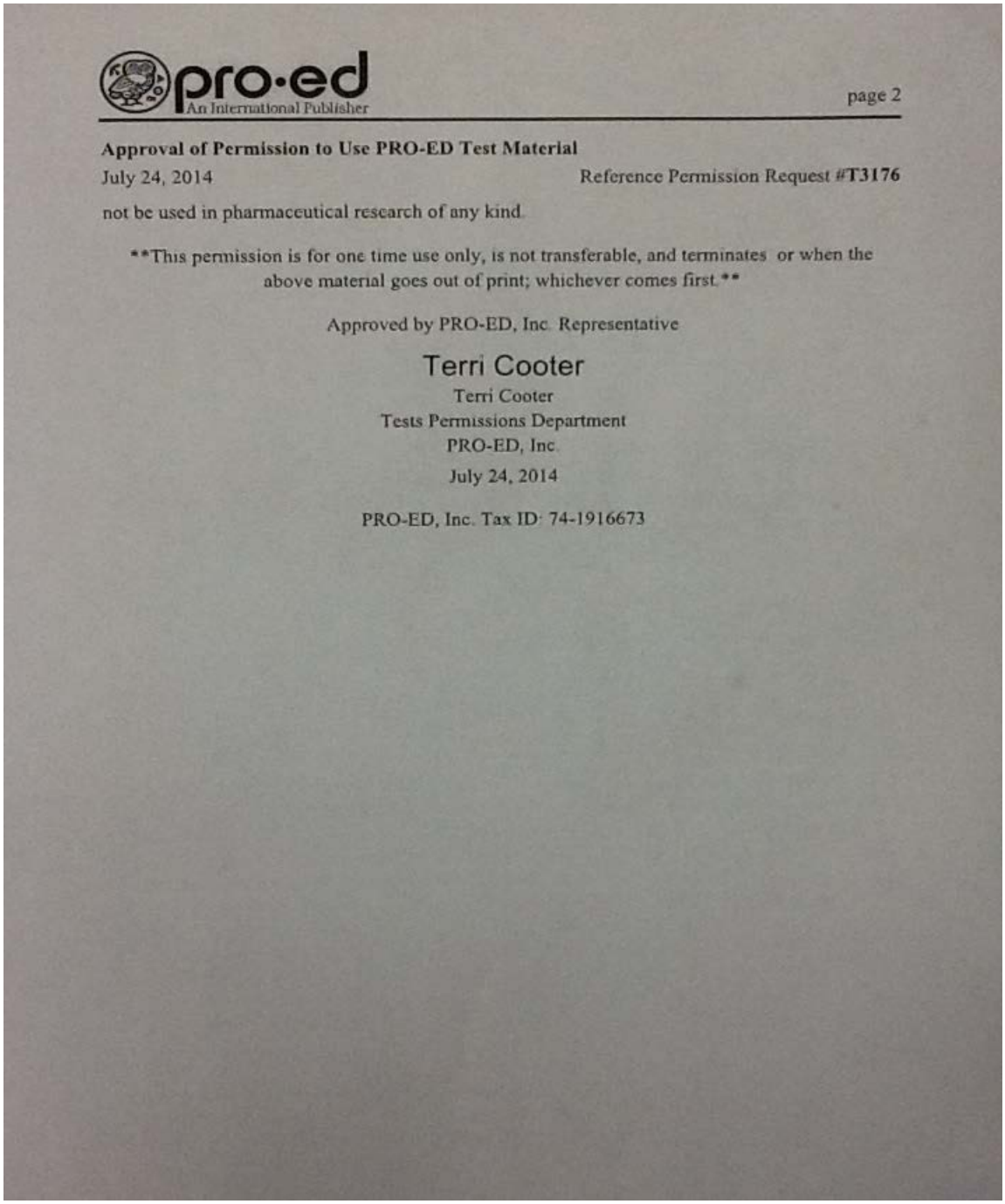
Total Paid: $

APPROVAL:

The foregoing application is hereby approved provided that the form of credit and copyright notice, as specified in the sixth edition of the *Publication Manual of the American Psychological Association* or an equally recognized format, gives full identification of author, publisher, copyright date, and title and states, "Used with Permission." This permission is solely for adaptation to non-original formats and should not be construed as a transfer of any rights, title or interest in the PRO-ED publication. This permission includes the right to approve, without charge, the publication or transcription in Braille, large print, audio or other formats, only for the use by print impaired individuals or to accommodate student IEP requirements and only if such an edition is not for commercial use. Should PRO-ED, Inc. in its sole discretion, determine the use of our material by you, the client, is contrary to the original intent as we understood it in your letter requesting permission, we reserve the right to demand that you cease and desist in your use of PRO-ED, Inc.'s material and remove it from the marketplace. PRO-ED makes no representations and warranties about the validity or reliability of the Licensed Material or its appropriateness or effectiveness with respect to your specific use. You agree to defend and indemnify PRO-ED, Inc. from any claims made against PRO-ED, Inc. on account of your use of the Licensed Material. By accepting this agreement, you confirm that the Licensed Material will

Appendix D Continued

Permission to Use the GORT-5



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Approval of Permission to Use PRO-ED Test Material

July 24, 2014 Reference Permission Request #**T3176**

not be used in pharmaceutical research of any kind.

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Approved by PRO-ED, Inc. Representative

Terri Cooter

Terri Cooter
Tests Permissions Department
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July 24, 2014

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