

**The Relationship between a Second and Third Grade Student's Change in the Rate of Improvement in Reading Fluency and the Initiation of Special Education Services**

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## Abstract

Writing individualized education plans (IEPs) that maximize the academic achievement of each student receiving special education services, specifically in the area of reading fluency, is an ongoing struggle for educational leaders. The purpose of this study was to determine if there was a change in the rate of improvement (ROI) in reading fluency for second and third grade students with the initiation of special education services. Additionally, the study was conducted to determine if IEP goal ambitiousness, the number of minutes per day receiving special education services, and the number of instructional accommodations and modifications, affected second or third grade students' change in ROI in reading fluency. This non-experimental study utilized reading fluency scores for 24 participants who attended a large suburban school district in northeastern Kansas. Students included in the study were evaluated for special education services for the initial time during the 2011-2012, 2012-2013, 2013-2014, and 2014-2015 school years. Reading fluency progress monitoring scores were collected 12-weeks prior to being identified as special education and 12-weeks after identification of special education to determine what change in ROI in reading fluency occurred for each student. The results of a one-sample *t* test indicated that the initiation of special education services did not have a significant impact on the change of a second or third grade student's ROI in reading fluency. The results of an independent samples *t* test indicated that IEP goal ambitiousness was statistically significant in affecting the change in ROI in reading fluency, but only for the second grade group of students. The results of the calculation of a Pearson product moment correlation determined a moderate positive relationship between the change in ROI in reading fluency for a second or third grade student and the

number of minutes per day receiving special education services. The results of a one-sample  $t$  test indicated the relationship between the two variables was marginally significant. Finally, the calculation of a Pearson product moment correlation determined a moderately weak negative relationship between the change in ROI in reading fluency for a second or third grade student and the number of instructional accommodations and modifications. The results of a one-sample  $t$  test indicated the relationship between the two variables was not statistically significant. This study has implications for general and special education teachers, as well as district and building leaders, to ensure each student's special education services are accelerating the academic progress of the student. Suggested further research includes replicating the study with varied IEP goals and specific instructional accommodations and modifications that may accelerate the ROI in reading fluency for a second or third grade student.

## **Dedication**

This work is dedicated to my loving family who encouraged me to pursue a life-long goal of completing a doctoral program. To my husband and best friend, Josh, thank you for not only being my rock every step of this journey but also for reminding me to take breaks and enjoy our incredible life together. I am so excited to share this with you. To my daughter, Max, thank you for being my inspiration to complete this program as quickly as possible. I promise there will be more trips to the parks now that I am finished! For my parents, Kathy and Terry Houlton, thank you not only for instilling in me the ambition required to finish this program, but also for your continuous support along the way. Words cannot adequately express my gratitude for the sacrifices you have made to allow me to be where I am today. To my brothers, Andy and Alex Houlton, and their amazing wives, Jenni and Jess, thank you for your constant words of encouragement and for being such a strong support system for me. For Dr. Dogg and Munchkin, thank you for always checking in on the progress of my dissertation, and for everything that you have provided to Josh and me to allow me to complete this program.

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## Table of Contents

Abstract .....	ii
Dedication .....	iv
Acknowledgements .....	v
Table of Contents .....	vii
List of Tables .....	x
Chapter One: Introduction .....	1
Background .....	2
Statement of Problem .....	5
Purpose Statement .....	6
Significance of Study .....	6
Delimitations .....	7
Assumptions .....	7
Research Questions .....	8
Definition of Terms .....	8
Overview of the Methodology .....	10
Organization of Study .....	10
Chapter Two: Review of the Literature .....	12
Evolution of the IEP .....	12
P.L. 94-142 .....	13
Education for All Handicapped Children Act Amendments (EHAA) of 1986 .....	15
Individuals with Disabilities Education Act (IDEA) 1990 .....	16

IDEA 1997 .....	17
Individuals with Disabilities Education Improvement Act (IDEIA)	
2004.....	18
Every Student Succeeds Act (ESSA) 2015.....	20
Academic Outcomes for Students Receiving Special Education Services .....	20
IEP Components and Academic Achievement .....	24
IEP Goals .....	25
Service Delivery.....	28
Instructional Accommodations and Modifications.....	33
Summary .....	35
Chapter Three: Methods .....	37
Research Design.....	37
Selection of Participants .....	37
Instrumentation .....	38
Measurement.....	39
Validity and reliability .....	40
Measurement of Other Variables .....	43
Data Collection Procedures.....	44
Data Analysis and Hypothesis Testing .....	45
Limitations .....	47
Summary .....	48
Chapter Four: Results .....	49
Descriptive Statistics.....	49



Hypothesis Testing.....	52
Additional Analyses.....	55
Summary.....	59
Chapter Five: Interpretation and Recommendations .....	60
Study Summary.....	60
Overview of the problem .....	60
Purpose statement and research questions .....	61
Review of the methodology.....	61
Major findings.....	62
Findings Related to the Literature.....	62
Conclusions.....	65
Implications for action .....	65
Recommendations for future research .....	67
Concluding remarks .....	69
References.....	70
Appendices.....	80
Appendix A. IRB Form.....	80
Appendix B. Baker Letter of Approval.....	85
Appendix C. District Permission .....	87

## List of Tables

Table 1. Criterion-Related Validity for DIBELS Oral Reading Fluency with GRADE	
Total Test .....	41
Table 2. Alternate-Form Reliability for DORF .....	42
Table 3. Test-Retest Reliability for DORF .....	43
Table 4. Descriptive Statistics for the ROI in Reading Fluency .....	50
Table 5. Descriptive Statistics for the Number of Minutes per Day Receiving Special Education Services.....	51
Table 6. Descriptive Statistics for the Number of Instructional Accommodations and Modifications.....	51

## **Chapter One**

### **Introduction**

The individualized education program (IEP) is one of the most valuable tools available in education (Lentz, 2012). However, how to write IEPs that best serve students qualifying for special education services is an ongoing challenge school districts face (Edmonson, 2012). The law requires that IEP goals be focused on progressing in the general education curriculum, and the general education environment is the desired location for students to receive educational services (U.S. Department of Education, 2004). In practice, this has resulted in IEPs that are focused on students accessing curriculum through general accommodations rather than student outcomes (Ewing, 2009). If students identified as requiring special education services are going to have a better prognosis than current research has indicated, it is imperative to develop IEPs that align with higher levels of student achievement rather than proof of compliance with state and federal mandates.

Learning disability (LD) is the largest student category in special education, and most of these students struggle with mastering reading skills (Gersten & Dimino, 2006). By law, students qualifying for special education services have an IEP that is specifically designed to meet their individual needs. Matching research-based instructional practices to the specific needs of a student should result in accelerated growth in the area the student is receiving specialized service (Swanson & Vaughn, 2010). Current research indicates that special education does not always successfully provide specialized services to meet individual needs, and students with learning disabilities typically perform lower than their peers, as well as demonstrate slower rates of improvement (ROI) (Deno, Fuchs,

Marston, & Shin, 2001; Fuchs, Fuchs, & Vaughn, 2014). Post-school outcomes for students with learning disabilities also yield significant concerns about the effectiveness of special education services positively affecting academic achievement. Wagner, Newman, Cameto, Garza, and Levine (2005) reported that 25% of students with a learning disability dropped out of high school, and only 46% of students with learning disabilities described themselves as having regular paid employment after high school.

### **Background**

The school district in which this study was conducted, School District A, was a large suburban school district located in northeastern Kansas. According to School District A (2015), the district spanned 72 square miles and spread across 14 cities. The district had 33 elementary buildings, five middle schools, and five high schools that educated an estimated 27,200 students each year. On the official student count day for 2015, 37.5% were classified as economically disadvantaged, and 11.2% were identified as English language learners (Director of Assessment and Research, personal communication, April 18, 2016). White was the largest subgroup, reported as 64.2% of the student population. The largest student racial subgroup was Hispanic with 18.3%, followed by Black at 9.2%, Multiethnic at 5.1%, Asian Pacific at 2.8%, and American Indian at 0.3% (Director of Assessment and Research, personal communication, April 18, 2016). In addition, the district reported that 8% of the total population received special education services, and an additional 4% received services for gifted (Director of Assessment and Research, personal communication, April 18, 2016).

In School District A, students' needs were met using a multi-tier system of supports (MTSS), which the district defined as "how the schools provide supports

through differentiated core instruction and supplemental interventions when needed, for each child to be successful” (School District A, 2015, p. 5). As part of the MTSS process, each building in School District A had a team of educators who planned interventions for individual students who demonstrated the need for academic or social/behavioral competencies. School District A (2015) reported that the teams also determined a monitoring process of student progress, and used the data collected to guide decisions regarding the students’ educational and social/behavioral needs.

As part of MTSS, all elementary students were administered the Dynamic Indicator of Basic Early Literacy Skills (DIBELS) three times a year (School District A, 2015). School District A (2015) reported that this assessment served as a universal screener of a student’s basic reading level. If a student was not at the benchmark score, it might be an indicator that the student required an intervention in reading, and then progress monitoring with the reading fluency assessments weekly, bi-weekly, or monthly (Scholin & Burns, 2012). The data collected from progress monitoring indicated whether the intervention was positively affecting the student’s reading skills, or if more intensive interventions or customization of instruction was required (School District A, 2015).

When a school district effectively implements an MTSS approach, it is crucial for the district to define criteria for success (Fuchs & Fuchs, 2006). To determine a student’s response to the intervention, School District A recommended each MTSS team use the beginning benchmark score collected at screening as a baseline score. Progress monitoring data is then graphed with the benchmark score to determine the ROI the student made. To determine ROI at any time, the median score of three weeks of progress monitoring was compared to a different median of three weeks of progress

monitoring, and the difference was divided by the number of weeks in-between the scores.

If a student continued to demonstrate insufficient progress through progress monitoring, as well as classroom performance data, and all resources and interventions had been exhausted with minimal success, the MTSS team referred the student to the diagnostic team (School District A, 2013). With the collaboration of the student's parents or guardians, the diagnostic team designed and carried out a multi-disciplinary evaluation (School District A, 2013). When the evaluation process was completed, a meeting was held to determine if the student was eligible for special education. If the student qualified for special education services, the team created an IEP intended to meet the student's needs.

During the 2011-2015 school years, of the total number of students qualifying for special education services in grades 2-6, 47.8%-59% scored well-below grade level expectations on the DIBELS oral ready fluency (DORF) assessment (Director of Assessment and Research, personal communication, May 13, 2016). While many students receiving special education services continue to score well below grade level on DORF assessments, there are students who do make tremendous progress, but of the students who do make large academic achievement gains, there is no data collected in School District A to document which instructional practices led to the academic gains. Additionally, no studies in School District A have been completed to determine if there are characteristics of the IEPs of students who do make significant academic gains, to determine if there are similarities between those students' IEP documents.

## **Statement of the Problem**

Students identified with a specific learning disability in the area of reading require specialized instruction beyond what is available through general education resources. Specialized instruction aligned with student need should result in accelerated learning progress (Swanson & Vaughn, 2010). However, research has shown that students receiving special education services in the area of reading progress typically at a rate that is almost half of what their peers do in the early elementary years when the rate of progress is the most easily influenced (Deno et al., 2001). One reason for a difference in improvement rate is that very few teachers are highly skilled in individualizing reading programs designed to instruct students with difficulties in mastering reading concepts (Fuchs et al., 2014). Additionally, nearly 40% of students receiving special education services receive no substantial modifications in general education classes to maximize educational benefit (Schiller, Sanford, & Blackorby, 2008).

Limited research has been conducted to evaluate special education services and resources provided to students related directly to the intended outcomes as stated on the IEP. Although research has been published on how to write IEP goals that satisfy state mandates (Dragow, Yell, & Robinson, 2001), few studies have addressed the aspects of the individualized program that will drive higher levels of student performance. The current study was conducted to determine the effectiveness of services to students in special education with changing the ROI in reading fluency by measuring the specific services delivered to the student and identifying the specific components of an IEP that lead to significant academic gains.

## **Purpose Statement**

The first purpose of this study was to determine whether second or third grade student's ROI in reading fluency changes with the initiation of special education services. The second purpose of this study was to determine whether there is a difference in the change of ROI in reading fluency of second and third grade students between those who have IEP goals that are more ambitious and those who have goals that are less ambitious. The third purpose of this study was to determine the relationship between the change in ROI in reading fluency and the number of minutes per day of special education services received by a second and third grade student. The final purpose of this study was to determine the relationship between the change in the ROI of reading fluency and the number of instructional accommodations and modifications listed in a second or third grade student's IEP.

## **Significance of the Study**

An emphasis is often placed on compliance with state and federal special education laws when teachers are formulating IEPs. The results of this study could help shift the emphasis to results-driven IEPs by highlighting components of the individual program that are more likely to lead to greater rates of improvement in the academic areas in which the student is receiving services. IEPs continue to document compliance with current laws but are also an educational tool designed to ensure greater rates of success. Furthermore, the results of this study could provide essential information to educational leaders on how to ensure special education services provided are grounded in evidence-based instructional practices, resulting in higher achievement for students receiving special education services. Finally, the findings from this study could



contribute to the current research related to the academic success of special education students.

### **Delimitations**

Lunenburg and Irby (2008) defined delimitations as “self-imposed boundaries set by the researcher on the purpose and scope of the study” (p. 134). The following delimitations were placed upon this study.

1. Data were collected from one large suburban school district located in Kansas.
2. The data used for this study were gathered during the 2011-2012, 2012-2013, 2013-2014, and 2014-2015 school years.
3. The records that were utilized for this study were from students who qualified for special education services for the first time while in second or third grade.
4. Only those students whose IEPs included a reading goal written to increase oral reading fluency were included in this study.

### **Assumptions**

According to Lunenburg and Irby (2008), “assumptions are premises and propositions that are accepted as operational for purposes of research” (p. 135). The following assumptions were made during this study.

1. All benchmark and progress monitoring data entered into the DIBELS management system were accurate.
2. Students gave their best effort when completing progress-monitoring activities.
3. The services, accommodations, and supplemental supports specified in the IEPs were adhered to as written.

## Research Questions

This study was conducted to explore the impact special education services had on the change in the ROI in the area of reading fluency for second and third grade students. Additionally, this study was conducted to examine different components of the IEP to determine if there was a specific aspect of the IEP that influenced the change in ROI in reading fluency. The following questions guided his study:

**RQ1.** To what extent is there a difference in the change of a second or third grade student's ROI in reading fluency with the initiation of special education services?

**RQ2.** To what extent is there a difference in the change of a second or third grade student's ROI in reading fluency whose IEP goals are more ambitious and second or third grade students whose IEP goals are less ambitious?

**RQ3.** To what extent is there a relationship between the change of a second or third grade student's ROI in reading fluency and the number of minutes per day of special education services received by the student?

**RQ4.** To what extent is there a relationship between the change of a second or third grade student's ROI in reading fluency and the number of instructional accommodations and modifications documented in a student's IEP?

## Definition of Terms

Terms used throughout this study are defined to provide clarity so that the research may be accurately interpreted.

**Goal ambitiousness.** The concept of goal ambition refers to how much progress a student must make to attain the goal. Ambitious goals are difficult to attain and require

more progress, whereas less ambitious goals are easily attained with minimal progress (Fuchs, Fuchs, & Deno, 1985).

**Individualized education program (IEP).** An IEP is developed through the collaboration of school personnel and families, and details the goals a student will work to achieve, and the educational placement, services, and supports required to attain the goals (Edmonson, 2012).

**Instructional accommodations.** An instructional accommodation is an intentional instructional change or alteration that does not affect the standards or goals of the lesson (Ysseldyke et al., 2001).

**Instructional modifications.** An instructional modification is a change made during instruction that alters the goals or standards a student is working to achieve (Ysseldyke et al., 2001).

**Intensity of interventions.** Intensity of intervention is defined as the amount of learning time focused on a specific content area or skill (Torgesen, 2000).

**Oral reading fluency (ORF).** Oral reading fluency is a measure of a student's ability to read unfamiliar connected text with automaticity (Good et al., 2011).

**Progress monitoring.** Progress monitoring was defined as frequent and short assessments that take place to determine the effectiveness of instruction on impacting a specific skill (Good et al., 2011).

**Rate of Improvement (ROI).** ROI was defined as a student's average performance over a specified period of time (Deno et al., 2001).

## **Overview of the Methodology**

In this non-experimental research study, DORF progress monitoring scores for second and third grade students were collected 12 weeks before the initiation of special education services and 12 weeks after the initiation of services to measure what change in ROI in reading fluency was observed. Data on the number of correct words a student reads in one minute from the DORF progress monitoring assessment were used to measure the ROI pre-special education identification and post-special education status. Additional analyses were conducted to test components of the IEP. The components of the IEP that were used as variables included goal ambitiousness, the amount of time per day receiving special education services, and the number of instructional accommodations or modifications documented in a student's IEP. A one-sample *t* test, an independent samples *t* test, and Pearson product moment correlations were used to analyze the data in this study.

## **Organization of the Study**

This chapter included an introduction to the study and background information about the school district in which the study was completed. The focus of this research was to examine how special education services affect the ROI of reading fluency for second and third grade students. Additionally, the statement of the problem, purpose statement, and significance of the study were identified, the delimitations and assumptions of the current study were listed, and the research questions guiding the study were stated. Finally, this chapter included the definition of terms and an overview of the methodology for the study. Chapter two contains a review of the literature on how the IEP has evolved over time, the available research on the academic outcomes resulting

from special education services, and a synthesis of the information regarding how different components of an IEP may affect academic achievement. In chapter three, the methodology of the study is described, which includes the research design, population and sample, instrumentation, measurement, data collection procedures, and hypothesis testing. The results of the data analysis are presented in chapter four. Provided in chapter five are a summary of the study, findings related to the current literature, and a conclusion that includes implications for action and recommendations for future research.

## **Chapter Two**

### **Review of the Literature**

The development of an IEP was intended to be a process in which schools and families collaborated to determine how to provide a free and appropriate education to students receiving special education services (McLaughlin & Warren, 1995). Since the initial national provision requiring school districts to implement IEPs in 1975, educators, administrators, and families have struggled to meet what is legally required, and still meet the appropriateness requirement of the law (Huefner, 2000). This chapter includes a discussion of the evolution of the IEP since it was first written into law in 1975, to the most recent passage of Every Student Succeeds Act (ESSA) in 2015. In addition, research on the effectiveness of special education is presented. Finally, this literature review includes an examination of the different components of an IEP to determine which aspects could have the greatest impact on a student's academic achievement.

#### **Evolution of the IEP**

P.L. 94-142, The Education for All Handicapped Children Act, is often defined as the onset of special education, when, in fact, the journey of creating that monumental law began more than a century before its passage (Weintraub & Ballard, 1982). The first documented specialized instruction began with educating children who were deaf or blind (Salend & Duhaney, 2011). As more research became available on student success through specialized instruction, other educators and researchers began to find strategies to educate a variety of students, including children with cognitive disabilities. These services were initially only available in private education and were costly to the parents of children receiving these services (Salend & Duhaney, 2011). In 1852, Pennsylvania

was the first state to appropriate funds for the education of children with cognitive disabilities in private education (Weintraub & Ballard, 1982). As evidence of the success of these programs became available, many states began adapting classes for children with physical and cognitive disabilities and passing state legislation to provide standards for special education services. Congress passed the Elementary and Secondary Education Act (ESEA) in 1965 that focused on improving the instruction of low-performing students, including students with physical and cognitive disabilities (Weintraub & Ballard, 1982). The following year, the Education of the Handicapped Act (P.L. 89-7900) was passed and provided the foundation for the federal government to provide funds to states, districts, and researchers working to improve special education services. While states and other agencies were beginning to improve the services provided to students within special education, there were still no minimal standards of access to educational services guaranteed to all students requiring special education services (Zettel & Ballard, 1982).

As local and state agencies collected federal monies to provide specialized services, it opened the door for families of students with disabilities to advocate for what these services should entail. From 1972 to 1974, 46 right-to-education cases were heard by more than 20 states across the country, with the rulings favoring the student in the majority of cases (Zettel & Ballard, 1982). By 1975, it was clear that all children, regardless of disability or need, had an undeniable right to be educated (Zettel & Ballard, 1982).

**P.L. 94-142.** While the Education for All Handicapped Children Act cannot be credited with the beginnings of special education, it was the first federal mandate that

determined a minimal standard for the education of children with a disability (Schrag, 1996). To ensure the right of an education for any student eligible for special education, an IEP would be developed to meet the student's unique needs (Christle & Yell, 2010). The IEP was the fundamental focus of P.L. 94-142 and required local agencies, in collaboration with families, to create a written, individualized education program that would meet the unique needs of each student (Zettel & Ballard, 1982). The IEP, as noted in P.L. 94-142, specified 11 specific items on which local education agencies were required to collaborate with parents of students aged 5 to 17 to be considered compliant. Those 11 items included (1) a statement of the child's present level of educational performance, (2) a statement of annual goals, (3) short-term objectives, (4) a statement of the educational services to be provided, (5) the date services were going to begin, (6) the length of time the services would be active, (7) a statement explaining the extent the child would participate in regular education programs, (8) a specific criteria for evaluating, (9) suggested evaluation procedures, (10) suggested schedule for determining if objectives were met, and (11) a minimum of an annual evaluation (P.L. 94-142, 1975).

Local education agencies began to see the number of students served by special education increase after the passage of P.L. 94-142 and frantically began implementing procedures to comply with the regulations of the law (Zettel, 1982). To determine what processes and procedures were being put in place to meet the demands of the law, the Bureau of Education for the Handicapped (now the U.S. Office of Special Education) worked with the Research Triangle Institute to review more than 2,500 IEPs from 42 states. The final report, released in 1979, indicated that only 36% of the IEPs reviewed contained all 11 required components of the IEP mandates. In addition to incomplete



IEPs, only 49% of parents actively contributed to an IEP meeting (Pyecha et al., 1980). Also, researchers noted problems with IEPs related to the education and expectations of students requiring special education. Concerns included annual goals and short-term objectives that were not specific or ambitious, a disconnect between the present levels of performance and goals, and limited specifics for instructional purposes (McGary & Finan, 1982; Schneck, 1980)

The goal of P.L. 94-142 was to enhance the quality of lives for all students, by guaranteeing them a right to an appropriate education at no cost (Zettel & Ballard, 1982). While these ambitions were admirable, the process and result of special education services were not producing the intended results for all students (Carine & Granzin, 2001). The next 40 years of special education's history is full of reauthorizations, amendments, and development of strict compliance guidelines, as legislation, advocacy groups, families, and educational leaders struggled to find the right balance for achieving an appropriate education for all students.

#### **Education for All Handicapped Children Act Amendments (EHAA) of 1986.**

The Education for All Handicapped Children Act justified that all students deserved to be educated, regardless of disability. As time passed, it became clear that this civil right should be for all students, not just for students starting at the age of five (Hauser-Cram, Upshur, Krauss, & Shonkoff, 1988). This recognition of equal rights led to the passage of P.L. 99-457, otherwise known as the EHAA of 1986. These amendments guaranteed a free and appropriate education for students three to five years of age who were not previously protected by the law, thus expanding the number of students qualifying for services. The amendments passed in 1986 did not affect the implementation of IEP

services but reauthorized the previous mandates. However, by the time this amendment was passed, research was already becoming available that documented concerns regarding the IEP document, the collaborative process involved in creating an IEP, and the resources with which special education services were delivered (Smith, 1990).

**Individuals with Disabilities Education Act (IDEA) 1990.** In 1990, P.L. 94-142 was reauthorized and renamed IDEA. One fundamental change that signified a shift in thinking about the education of individuals with disabilities was the changing of the word from handicapped to disability (Ashbaker, 2011). Additionally, transition services became a required component of an IEP by the time a student was 16 years old, and services were expanded to include students 18 to 21 years old.

At the time of IDEA's reauthorization, researchers were focused on different concerns surrounding the IEP. Many educational agencies were concerned about the financial costs involved in creating and implementing IEPs (Schrag, 1996). Another concern noted related to the participation of general education teachers and parents in the development of the IEP (McLaughlin & Warren, 1995). Furthermore, there were concerns that the IEP was becoming the sole curriculum for students receiving special education services, rather than just a component of the education (McLaughlin & Warren, 1995). Many educators and researchers believed that the IEP was becoming more about proving what the schools did to ensure compliance, rather than the process of developing an individualized program to meet specific needs of a student (Huefner, 2000). These concerns led to demands for reform in the development of the IEP to ensure all students had access to general education curriculum.

**IDEA 1997.** IDEA was amended in 1997, with the primary goal of improving the effectiveness of special education services (Drasgow et al., 2001). Previous amendments had focused on including more groups of students under the federal mandate by either age or disability (Palmaffy, 2001). However, IDEA 1997, which is recognized as demonstrating the most significant changes, was passed with the intent of rectifying the concerns raised by researchers through addressing the issues of access to general education resources, as well as accountability for the academic success of students (Carine & Granzin, 2001). One of the major changes to the amendments to IDEA in 1997 was the inclusion of students with disabilities in state and local assessments (Huefner, 2000). Expecting students with disabilities to partake in these assessments required students to participate in the general education curriculum, which required special education educators and general educators to more closely collaborate in the IEP process (Huefner, 2000). Additionally, the amendments required the annual goals of an IEP to be aligned specifically with the general education curriculum, to be measurable, and to document meaningful academic progress (Drasgow et al., 2001).

While the required components of annuals goals on IEPs saw significant changes, other aspects of the IEP were also drastically impacted. The IEP was now the tool that served as an instructional guide to both special and general educators (Huefner, 2000). An IEP was now required to include an explicit list of supplementary aids and modifications a student needed to achieve the stated goals that both general and special educators were mandated to provide (Huefner, 2000). The IEP was no longer going to be just about services provided by a specific teacher in a special classroom; instead, it now

outlined what general educators were to provide to students with disabilities to ensure their meaningful progress.

While the writers of IDEA 1997 had aspirations of having general and special educators collaborate harmoniously to ensure all students with disabilities had meaningful access to the general education curriculum, in reality, special education became more focused on ensuring a compliant process, rather than results (Yell, Shriver, & Katsiyannis, 2006). Additionally, school districts and educators vocally expressed frustration for the rigid rules set forth by IDEA 1997, as it made tailoring programs for specific needs more difficult to achieve (Yell et al., 2006). Clearly, current policies were not meeting the intended results, and further changes in both policies and mindset would need to occur to change the impact special education would have on students.

#### **Individuals with Disabilities Education Improvement Act (IDEIA) 2004.**

Three major influences guided the reauthorization of IDEA 2004 (Yell et al., 2006). The first influence was the No Child Left Behind Act (NCLB) of 2001. This important piece of legislation established a timeline for all students to be proficient in reading and math by the 2013-2014 school year (Yell et al., 2006). The second major influence was the creation by President George W. Bush of the President's Commission on Excellence in Special Education to report on the current state of special education before reauthorizing IDEA (U.S. Department of Education, 2002). The commission held 13 public hearings across the country and released the final report in 2002 titled, *A New Era: Revitalizing Special Education for Children and Their Families* (U.S. Department of Education, 2002). This report included three critical recommendations: a) a shift focusing on the results rather than the process, b) the creation of a model based on prevention over a

model of responding to failure, and c) an emphasis that all children are general education students first. The final major influence on the reauthorization of 2004 was a report released in 2001 by the Thomas B. Fordham Institute (Finn, Rotherham, & Hokanson, 2001). This report was a compilation of 14 articles by specialists in the field of special education in which limitations of current practices were discussed, along with implications for improved policies leading to more desired results (Finn et al., 2001). The major recommendations for special education reform from this report included: a) the criteria for success of IDEA should be results; b) streamline the categories defined in IDEA; c) focus on preventing students from failing; d) provide schools with flexibility; e) properly fund special education; and f) end the double standard for special education students, especially discipline procedures (Finn et al., 2001).

The major influences of the reauthorization shifted the focus of IDEIA, also referred as IDEA 2004, to improving the outcomes for students with disabilities (Yell et al., 2006). Aligning IDEA 2004 to NCLB caused significant changes to policies and procedures in special education. These major changes included requiring highly qualified teachers, specifying targets that aligned with the 2013-2014 timeline to have all students proficient in reading and math for students with disabilities, using research-based interventions, and changing how students qualify for special education services, in which a response to intervention model could be used instead of the discrepancy model (Yell et al., 2006).

Changes were made to the IEP that highlighted the focus on improving outcomes for students with disabilities. One fundamental change was the emphasis on the educational benefit of an IEP, thus ensuring students make academic progress (Christle &

Yell, 2010). To ensure this requirement is met, teachers must create goals directly aligned with the student's individual needs, deliver services that are based on peer-reviewed literature, and monitor progress and adjust services as needed to meet the goals outlined in the IEP (Yell et al., 2006). Another significant change in the IEP process allowable by IDEA 2004, which was in response to the rigid guidelines of previous laws, was the ability for the IEP to be changed without holding a meeting. This change allowed schools and special education teachers to respond and adjust to a student's program promptly, rather than waiting for an annual review of the IEP (Yell et al., 2006).

**Every Student Succeeds Act (ESSA) 2015.** ESSA, which replaced NCLB, was signed by President Obama in December 2015. Some of the major shifts in this law include moving more control to the state and local levels, measuring the success of students using multiple instruments rather than just state-mandated assessments, and a stronger focus on early childhood (P.L. 114-95). Historically, each reauthorization of ESEA has brought forth changes to special education laws. Potentially, lawmakers and political figures could be in the process of reauthorizing IDEA once again, and the focus should be on continuing to improve the outcomes of students in special education. To understand what changes may be included in the next reauthorization, it is important to evaluate the research available on the current outcomes of students with disabilities and the effectiveness of special education services.

### **Academic Outcomes for Students Receiving Special Education Services**

School districts expend a significant amount of money to provide special education services, but research has led to less-than-conclusive evidence that special education services raise student achievement beyond general education's capabilities

(Hanushek, Kain, & Rivkin, 1998). The lack of empirical evidence to support the effectiveness of special education was mostly due to the comparison group in research studies (Shinn, 1986). Students identified as qualifying for special education are by definition different from their same-aged peers and achieve at different rates (Ewing, 2009; Hanushek et al., 1998; Shinn, 1986).

In 1998, Hanushek et al. published a report that attempted to overcome the experimental design difficulties in postulating the effects of special education services on student achievement. They used the Texas Assessment of Academic Skills (TAAS), which was a reading and math assessment administered to each year to eligible students in grades three through eight. Hanushek et al. (1998) compared the scores of students receiving special education services in fourth or fifth grade during the 1994, 1995, and 1996 school years to the scores the students received when they were not receiving special education services. By using the scores of students who transitioned in and out of special education services, they were able to identify an effect size. After using statistical analysis on more than 800,000 students attending more than 1,000 Texas schools, they determined that special education programs increased reading achievement an average of .04 standard deviations, and math achievement an average of .18 standard deviations (Hanushek et al., 1998). While they produced evidence that special education has a positive impact on student achievement, there was one major flaw in the sample used in the study. Since the study was conducted before the passage of NCLB, a student's IEP could dictate the student was not required to take the TAAS (Hanushek et al., 1998). It was estimated that nearly 30% of students receiving special education services were not included in the study (Hanushek et al., 1998). Not having the assessment data for all

students causes concern for the reliability of the effect sizes. However, with an improved research design for estimating the effect of special education, Hanushek et al. (1998) paved the way for future researchers to investigate using a similar model in which students in special education are compared to other students in special education to determine growth rates or effectiveness of the intervention.

Ewing (2009) attempted to retest the calculations made by Hanushek et al. (1998) to determine if all students were tested, would results be similar. Ewing collected the scores from state-mandated assessments in reading and math from the state of North Carolina between the years 1997 and 2003 for all students in grades three through five. Ewing (2009) merged three years of testing data to evaluate gains by students in special education as compared to their peers. The results of the quantitative study demonstrated that the initiation of special education services for a student had a significant positive impact on achievement gains, but that part of the observed gains were contributed to the use of accommodations on assessments (Ewing, 2009). Additionally, Ewing (2009) determined that students identified as qualifying for services in later elementary years showed the least gains on both reading and math tests. Furthermore, students that exited special education during the timeframe of the study demonstrated negative gains when compared to peers. While Ewing (2009) was able to support that special education has a positive impact on student achievement as measured by end of grade assessments, at least some of the increase in achievement was related to using accommodations. Furthermore, a flaw in Ewing's research, as is the case with other research projects that use grade-level mandated assessments to measure the effectiveness of special education services, is the



actual services provided by the IEP to the student were not considered when evaluating whether a student achieved at improved rates.

To address concerns raised in the area of testing accommodations and aligning special education services with actual achievement gain, Deno et al. (2001) used a different strategy for evaluating special education effectiveness. Rather than evaluating the effect of special education services using large-scale assessments, Deno et al. (2001) designed a study using a measurement tool that directly aligned with the intended impact of special education services. Their quantitative study was conducted using data from four different education agencies located in the United States to converge large data sets to determine what ROI is typical of students with learning disabilities in the area of reading fluency. At three different benchmark periods (fall, winter, spring) 2,999 students were tested, and the median score of words read correctly was documented. Once normative growth rates were determined for the large set of students, data of special education students were analyzed to determine typical growth rates for students identified as receiving special education services. When comparing the two sets of data, it was determined that students in special education improved at a rate that was half of their peers. For research purposes, the typical expected growth of students in special education was determined to be an increase of one word per week in first grade and a 0.6 word increase per week in second through sixth grade. However, Deno et al. (2001) then analyzed six studies in which effective practices were used in special education, and it was determined that growth for students in special education improved to an average of 1.39 words per week improvement. Deno et al. (2001) concluded that special education can affect academic achievement within a specific academic area, and the researched-

based practices that align with student need can affect rate of growth for a student with a learning disability similar to that of non-special education peers. Additionally, the researchers noted that the areas of effective practices and goal ambitiousness might greatly contribute to significant growth for students receiving special education services. While the results of this study provided evidence that special education can be effective in improving academic achievement, the results were based on a student-to-student basis and relied on specific interventions to accomplish desired results.

Although irrefutable evidence on the effectiveness of special education for all students has not been established, researchers have been able to demonstrate that special education services can result in higher academic achievement. The definition of special education as providing specialized instruction may be one of the greatest obstacles in verifying the effectiveness of special education services because so much relies on individualization to match student need (Fuchs & Fuchs, 1995). However, it may be possible to identify specific factors that are most highly related to increased academic performances in special education, to ensure special education services are maximizing the educational benefit for each student.

### **IEP Components and Academic Achievement**

Once a child has been identified as qualifying for special education services, an IEP is written outlining the services that will be provided to the student, the reason the services are provided, and the goals that will be achieved through those services (Edmonson, 2012). While each individual plan must be tailored to meet the specific needs of the receiving student, research has identified promising practices in writing IEPs that will maximize any student's educational benefit. Specifically, evidence exists

related to goal writing, service delivery, and instructional accommodations that can be related to increases in academic performance for students.

**IEP goals.** When developing an IEP, goal writing is one of the most crucial aspects of the process, because the goal describes what the student is going to accomplish as a result of the services provided by the IEP (Edmonson, 2012). A goal must have sufficient rigor so that it could take more than minimal effort to achieve the goal (Edmonson, 2012). Many educators fear writing a goal that is too ambitious because their evaluation, or that of the team delivering the IEP, can hinge on the student meeting the goal (Fuchs et al., 1985). While this fear may provide an argument for changing the method in which special education staff are evaluated, the intent of the IEP must remain focused on accelerating the learning of each student in special education (Carnine & Granzin, 2001).

Fuchs et al. (1985) conducted a study to support the use of ambitious goals to accelerate rate of progress for students receiving special education services. The researchers designed a quantitative study using the reading achievement of students receiving special education services in the New York City Public Schools. The 39 special education teachers of the 58 participating students received specific training on setting student goals and monitoring progress towards the goal prior to the study beginning. Each student was first assigned a baseline reading level. Then a reading level goal was determined by having a student read for one minute, achieving a median score of 11-35 words read correctly, with fewer than 11 errors, over three consecutive days (Fuchs et al., 1985). A specific goal was then written for the student on the identified goal-level passages. When writing the goals, teachers were not required to follow

normative goal-setting criteria, and the correct number of words for the student goals ranged from 13 to 175 words. Fuchs et al. (1985) then created a formula for determining the goal ambitiousness by comparing the baseline performance to the anticipated performance. The formula required the researchers to divide the goal number of words by the baseline, subtract 1.0, and then multiply by 100. The researchers then labeled each goal as highly ambitious (greater than 139%), moderately ambitious (80% to 139%), and low ambitious goal (less than 80%). Throughout the duration of the study, teachers monitored the reading progress weekly and graphed the student's performance to monitor the actual growth against the anticipated growth. If actual growth was lower than anticipated growth, the teacher was required to implement a change in the student's instructional program. After 18 weeks of the program, the researchers determined that 31 students met their anticipated goal, and 27 students did not. Fuchs et al. evaluated the reading of all students at the completion of the data collection, and determined that students in the highly ambitious and moderately ambitious groups attained higher levels of achievement than did the students in the low goal group. The researchers also determined that goal attainment did not relate to higher academic achievement. If an IEP focuses on ambitious goal setting, rather than setting an easy to attain goal, higher academic achievement should be the result (Fuchs et al., 1985).

Fuchs, Fuchs, and Hamlett (1988) wanted to expand on the available research about how ambitious goals may lead to higher academic achievement using an alternate goal structure. The researchers partnered with 30 special education teachers from 16 different schools in the southeastern area of the United States. Teachers chose two students with whom they were currently working with to be a part of the study. The

teacher, with their corresponding students, was assigned to one of three groups (dynamic goal, static goal, and control). Using baseline data, each teacher wrote a math computation goal for each student. During the 15 weeks of data collection, each student bi-weekly completed a two-minute math computation assessment. The data was graphed and compared to a goal line for each student. If the teacher was in the dynamic goal group, they were prompted to raise the student's goal each time the student's rate of progress indicated it was going to exceed the goal. If the teacher was in the static group, they were informed when the student's progress exceeded the goal, but were not prompted to increase the goal. Additionally, when a student was not demonstrating sufficient progress, the teachers in both groups were prompted to adjust the instructional program for the student. Fuchs et al. found that the students in the dynamic group had more ambitious goals than the static goal group, and the effect size on achievement was .52, or about one-half a standard deviation. In addition to the inclusion of more ambitious goals, Fuchs et al. (1989) determined that the implementation of dynamic goals by teachers required more instructional changes to be made in the programming for each student. Having more ambitious goals may raise academic achievement because teachers are required to continually refine student intervention to ensure the student is making progress towards the goal (Fuchs et al., 1989).

Jenkins and Terjeson (2011) wanted to investigate how goal setting affects student achievement, how ambitious goals influence instructional decisions, and how these variables affect the growth towards IEP goals. In the study, 31 students receiving special education services from eight different schools in the northwest United States had data included in this study. The sample included 2 second graders, 15 third graders, 3

fourth graders, 10 fifth graders, and 1 sixth grader who received reading instruction in a resource room. The researchers used the data from Deno et al. (2001) to assign goal ambitiousness guidelines. Students with ambitious goals were expected to grow 1.5 words per week, students with modest goals were expected to grow 1.0 word per week, and students with less ambitious goals were expected to grow 0.5 words per week. Although the researchers tested other variables, the goal ambitiousness variable provided the most consistent and significant results. Based on the results, the researchers concluded that students, who have goals that are more ambitious, produce higher academic gains. Since all students at the most ambitious growth rate had instructional changes documented, it could be concluded that ambitious goals encourage teachers to make continuous changes in a student's instructional programming to ensure the students meet the goal. Students who have lower growth rates are closer to their goal lines, thus teachers are less inclined to make instructional changes, since they are observing growth that will meet the goal. However, Jenkins and Terjeson cautioned that there is a limit to achievement when writing ambitious goals, and when selecting a goal for a student, it should be ambitious yet attainable. Additionally, the researchers noted that a student's progress might be limited, regardless of goal ambitiousness, if a teacher is not skilled in revising instructional programming for a student.

**Service delivery.** When designing an IEP for a student, the services provided to the student through the IEP must be clearly stated, as well as the duration, frequency, and location of those services (Edmonson, 2012). Research has been published on the amount of time a student should receive intervention instruction and the impact on student achievement, but no conclusive recommendations have been made available to

educators (Vaughn, Wanzek, Murray, & Roberts, 2012). To meet the needs of learners who have been identified as having a specific learning disability, it must be determined how much specialized instruction is needed to meet the stated goals (Torgesen, 2000).

Torgesen et al. (2001) examined what conditions were needed for students with reading difficulties or serious reading disabilities to make progress. The researchers conducted a quasi-experimental study that used 60 eight to ten-year-old students from one Florida school district who were identified as learning disabled prior to the study. The participants in the study were chosen because they scored at least 1.5 standard deviations below same-aged peers, still lived with their birth parents, had a history of chronic illnesses, did not demonstrate sensory deficits, did not qualify as students who were English Language Learners, and did not demonstrate an acquired neurological disorder. Prior to the intervention, each participant was administered standardized reading assessments, which evaluated a variety of reading skills, as well as language assessments and other academic skills assessments. For the intervention, participants were assigned to one of two reading intervention programs and received one-to-one instruction for two 50-minute intervention sessions daily for eight or nine weeks. Following the eight to nine weeks of one-on-one instruction, the student was provided one 50-minute intervention session per week in which the interventionist the student had previously worked with provided instruction using the student's grade-level coursework. After the completion of the intervention, about 40% of the participants no longer required special education services. In comparison, results of the study indicated that the school district was only able to dismiss approximately 5% of students receiving special education services annually. The specific areas in which the intervention was able to

make the greatest impact on student achievement were phonemic awareness, word attack, and word identification. Reading fluency was the area in which the least improvement was observed. While the intent of Torgesen et al. (2001) was not to evaluate the amount of time a student receives intervention, the researchers concluded that when compared to available research on reading interventions and struggling readers, the amount of time was one of the significant factors differing from other studies. Torgesen et al. (2001) concluded that more research was needed on how to improve both the quality and quantity of instruction for students who are identified as having a learning disability.

Wanzek and Vaughn (2008) wanted to determine if the amount of time a student spent in intervention influenced the amount of growth observed in students. Specifically, the researchers wanted to compare the growth of students in first-grade receiving 30-minutes of reading intervention daily, first-grade students receiving two 30-minute intervention sessions daily, and first-grade students who did not receive additional reading intervention outside of the classroom support. Over two consecutive school years, the data for this study were collected from first-grade students attending six elementary schools in the same southwestern school district. For the first research question, which related to the impact of 30-minutes of intervention daily, 21 students received the intervention treatment and 29 students were in the control group. For the second research question, which related to the impact of two 30-minute intervention sessions daily, 14 students received the treatment and 22 students were in the control group. For both research questions, the winter reading benchmark data were used to determine which students were targeted as participants of the study. The criteria for qualifying for the treatment intervention was a score of less than 30 correct sounds on the



Nonsense Word Fluency and less than 20 words read on the Oral Reading Fluency. Both of the subtests are part of the DIBELS assessment. Additionally, students could qualify for participation in the study if they read less than eight correct words on Oral Reading Fluency, regardless of their Nonsense Word Fluency score. Of the students who qualified, some were assigned to receive the treatment intervention, while the remaining students continued to receive instruction in their regular classroom from their teacher. The teachers who provided the treatment intervention were given sequenced lessons that targeted phonics, fluency, and passage reading and comprehension. Classroom teachers who had the comparison groups were also provided with training to target the skills of students who did not receive the treatment intervention. At the conclusion of the treatment intervention, of the students who had received the single intervention time of 30 minutes, 43% increased their oral reading score by 10 words or more; however, no students in this group were able to achieve the benchmark of 40 words-per-minute by the end of the school year. In the comparison group, 48% of students were able to increase their oral reading score by at least 10 words, and three students achieved the end of the year benchmark on words read correctly. For the students receiving two 30-minute sessions of intervention, 50% increased their oral reading fluency by 10 words or more, but no students were able to achieve the end of the year benchmark score of 40. The control group had 36% of the students increase their oral reading score by 10 words, and no students achieved their end of the year benchmark of 40. Overall, the students in both of the interventions achieved larger growth on the Word Identification, Work Attack, and Passage Comprehension assessments, as compared to the control groups. Wanzek and Vaughn (2008) concluded from the results of the study that students who demonstrate

low responsiveness to intervention could need more specialized instruction for longer periods of time. Additionally, the researchers suggested continued research to determine how to affect the fluency scores of struggling readers significantly.

Denton, Fletcher, Anthony, and Francis (2006) designed a quasi-experimental study to determine if providing eight weeks of intensive phonics instruction, similar to Torgesen et al. (2001), followed by eight weeks of intensive fluency intervention, would affect reading achievement. The study included 27 students who were in first through third grades, and who had attended four different elementary schools in an urban school district in a southwestern state. Some of the students included in the study were identified from a previous reading study and had not demonstrated adequate response to less intensive interventions. The remaining students were identified by classroom teachers as struggling readers. To determine adequate response to the intervention package, the researchers set the criteria of a gain of at least .05 standard deviations on a standardized reading assessment. At the conclusion of the study, 12 of the 27 students were determined to have made adequate growth. Of the students who did not make adequate growth, nine students were identified as students receiving special education services. The researchers concluded that having a more individualized intervention for students might have been more effective for students, instead of predetermining when the students would begin receiving the fluency intervention. Furthermore, the researchers concluded that more research was needed to set a criterion for phonics and decoding mastery, so that it was clear when students were ready to begin focusing on fluency and reading connected text for their intervention.

No conclusive evidence exists that a specific amount of time of intervention will

guarantee success in reading achievement. Both Torgesen et al. (2001) and Denton et al. (2006) provided almost two hours of intervention daily to students, and saw almost half of the targeted students demonstrate large gains in reading achievement. Wanzek and Vaughn (2008) provided half of the intervention time of the previous studies, and did not observe the same growth as noted in the other studies. Providing more intensive reading instruction that is individualized to the student's progress may lead to desired student achievement.

**Instructional accommodations and modifications.** The team writing an IEP is required to state the accommodations, modifications, or supplementary aids that a student needs to make progress towards the goals in all educational settings (Edmonson, 2012). Instructional accommodations are intended to remove obstacles related to the student's disability, and to ensure they are able to achieve academic levels consistent with their ability (Knockey, Blackorby, & Wagner, 2007). IEP teams must explicitly state what accommodations are needed to ensure the student is able to benefit from instruction (Ysseldyke et al., 2001). To be effective, instructional accommodations and modifications should increase the active engagement of students, and provide the student with additional opportunities to practice the skills they are working to develop (Horn & Banerjee, 2009).

To gain a better understanding of the school experiences of students receiving special education services, the Office of Special Education Programs (OSEP) collected data at three different times from 2000 to 2006. The Special Education Elementary Longitudinal Study (SEELS) used questionnaires to gather information from school staff, a variety of assessments to accumulate academic performance data of students, and

parent interviews to collect data pertaining to home influences on education. Knokey et al. (2007) released a report using the data collected from SEELS to determine what relationship existed between students receiving a variety of accommodations, modifications, or learning supports and longitudinal academic outcomes for a student. The specific accommodations, modifications, and learning supports that were used in the study included more time on tests, alternative tests, modified grading standards, slower-paced instruction, help from a teacher's aide or paraeducator, help from a reader, participation in a behavior management program, and learning strategies or study skills instruction. The researchers determined that the accommodations, modifications, and learning supports mentioned did not correlate to higher academic achievements, and students who received these accommodations performed lower than peers who did not receive the accommodation. The researchers cautioned that these undesirable results might be because students who have lower academic achievement require more accommodations, and students without the accommodations listed do not require them, and therefore have higher achievement capabilities. The researchers may not have been evaluating the potential of specific accommodations that would address the student's skill area identified on the IEP, and instead focused on general accommodations that may not affect the daily instruction of the student.

Horn, Lieber, Li, Sandall, and Swartz (2000) published a study investigating whether incorporating embedded learning opportunities (ELOs) into a student's IEP as an instructional accommodation would influence the student's progress towards their goals in early childhood classrooms. This multiple-case study evaluated the progress of four early childhood students receiving their education in an inclusive program. The students

attended three different schools, which were also located in different states. The researchers determined that implementing ELOs as instructional accommodations for a student greatly increased each of the student's achievement of the specific goals included in the IEP. Additionally, it was noted that the teachers who implemented the accommodations were pleased with the process and felt having specific accommodations they could provide to individualize the daily instruction to meet the goals of the student was beneficial. While the study included only a small number of participants, it does guide further researchers to investigate if having specific accommodations to embed learning opportunities for a student could affect student achievement positively.

Researchers have determined that the presence of instructional accommodations may be one way to provide students with embedded learning opportunities to achieve their goals (Horn et al., 2000). However, at the time this literature review was completed, few studies existed on what instructional accommodations and modifications may affect student achievement and accelerate a student's progress towards their goals. Ysseldyke et al. (2001) indicated that instructional accommodations and modifications were the easiest aspects of education to change, and finding the connection between the two was critical to developing IEPs that produced maximum student achievement.

### **Summary**

This review of the literature provided an overview of how the IEP has evolved from its conception to present day, and how the passage of different educational laws influenced the requirements of the IEP. The research was presented on the ability to affect student achievement through services available to student through special education. Specific components of an IEP were examined in depth to determine if

research is available regarding promising practices to write IEPs in a manner that will maximize student achievement. In chapter three, the research design, population and sample, and sampling procedures of the study are presented. Additionally, the instrumentation, data collection procedures, data analysis and hypothesis testing, and limitations are discussed.

## **Chapter Three**

### **Methods**

The purpose of this study was to determine how the initiation of special education services impacts the ROI of second and third grade students' reading fluency scores. Another purpose of this study was to determine if goal ambitiousness, the total amount of special education services, or instructional accommodations or modifications were related to changes in ROI in reading fluency. Included in this chapter are the details of the design of the study and descriptions of how each research question was addressed. The chapter includes an explanation of the research design used to conduct the study; description of the selection of participants; information about instrumentation, including the measurement and the reliability and validity; information about the measurement of other variables; the detailed explanation of data collection; description of data analysis and hypothesis testing; and identification of the limitations of the study.

#### **Research Design**

A non-experimental research design guided this study. A non-experimental design was most appropriate for this study because archival data were used. The independent variables used in this study included special education status, IEP goal ambitiousness, the number of minutes of special education services per day, and the number of instructional modifications stated in the IEP. The dependent variable in this study was the change in ROI in reading fluency.

#### **Selection of Participants**

The participants in this study were second and third grade students receiving special education services in School District A. A purposive sampling procedure was

used to select students from the 33 elementary schools in School District A who were identified as LD. Lunenburg and Irby (2008) defined purposive sampling as “selecting a sample based on the researcher’s experience or knowledge of the group to be sampled” (p. 175). A student’s data was included in this study if the following criteria were met:

1. The student was in second or third grade;
2. The student received an initial evaluation for special education services during the 2011-2012, 2012-2013, 2013-2014, or 2014-2015 school years;
3. The IEP included an oral reading fluency goal;
4. The student had at least 12 weeks of progress monitoring data recorded before the initiation of special education services; and
5. The student had at least 12 weeks of progress monitoring data recorded after the initiation of special education services.

### **Instrumentation**

Scores from DORF, a subtest of DIBELS Next, were utilized in this study. Bravo Aguayo et al. (2013) reported DIBELS Next was created to assess a student’s reading proficiency, and is used for both benchmarking and progress monitoring. Furthermore, the passage selections used for the purpose of progress monitoring students were specifically aligned to the reading range stated in the Common Core State Standards (Bravo Aguayo et al., 2013). DORF is reported to be an appropriate instrument to monitor the growth of reading for all students learning to read English, including students with learning disabilities (Kaminski et al., 2007). DORF is used to measure a student’s advanced phonics and word attack skills by having the student read unfamiliar reading passages at a specific grade level for one minute (Good et al., 2001).



For each grade level, a variety of literature and expository texts are available that students read for one minute. At the end of one minute, the number of correct words is recorded, as well as the number of errors. The number of correct words read is the student's DORF score, and the errors are subtracted from the total number of words read to determine an accuracy score (Good et al., 2011). Using data from DORF to determine the effectiveness of instructional supports is listed as an acceptable use of the assessment (Good et al., 2011). Special education is an instructional support, so utilizing scores from DORF is an appropriate measure for this study.

**Measurement.** DORF progress monitoring scores were used to calculate the change in ROI in reading fluency, which was the dependent variable for all of the research questions. To calculate the change in ROI for each student, the following steps were completed:

1. Identified the median of the DORF progress monitoring scores from weeks 1-3 pre-special education.
2. Identified the median of the DORF progress monitoring scores from weeks 10-12 pre-special education.
3. The median from weeks 1-3 pre-SPED was subtracted from weeks 10-12 pre-special education median and the difference was divided by 12 to determine the ROI pre-special education status.
4. Identified the median of the DORF progress monitoring scores from weeks 1-3 post-special education services.
5. Identified the median of the DORF progress monitoring scores from weeks 10-12 post-special education services.

6. Compared the medians and divided the difference by 12 to determine the ROI post-special education.
7. The difference in pre-special education identification ROI and post-special identification ROI was the change in ROI in reading fluency.

**Validity and reliability.** Validity is defined as “the degree to which an instrument measures what it purports to measure” (Lunenburg & Irby, 2008, p. 181). To establish validity, Good et al. (2011) used a criterion-related validity test in which they correlated students’ DIBELS Next scores with the Group Reading Assessment and Diagnostic Evaluation (GRADE) criterion assessment. The GRADE assessment is a norm-referenced reading assessment for students in kindergarten through twelfth grade. Correlations between DIBELS Next scores and GRADE scores are reported in Table 1.

Table 1

*Criterion-Related Validity for DIBELS Oral Reading Fluency with GRADE Total Test*

Grade	Beginning of the Year	Middle of the Year	End of the Year
1	-	.64	.75
2	.69	.76	.73
3	.66	.67	.66
4	.77	.77	.74
5	.69	.65	.65
6	.64	.59	.61

*Note.* Approximate pair-wise sample sizes: first grade  $\approx$  196 (125 with Retell); second grade  $\approx$  215; third grade  $\approx$  190; fourth grade  $\approx$  190; fifth grade  $\approx$  194; sixth grade  $\approx$  103. GRADE Total Test = Group Reading Assessment and Diagnostic Evaluation Total Test composite raw score. All correlations are significant,  $p < .001$ . Adapted from “DIBELS Next Technical Report” by R. H. Good III, R. A. Kaminski, E. N. Dewy, J. Wallin, K. A. Powell-Smith, & R. J. Latimer, 2011, p. 103. Copyright 2011 by the Dynamic Measurement Group, Inc.

Lunenburg and Irby (2008) described reliability as the “degree in which an instrument consistently measures whatever it is measuring” (p. 182). To establish reliability, the Dynamic Measurement Group released DIBELS<sup>®</sup> Next Technical Adequacy Supplement (2010) that included the procedures and results of the studies conducted. In an alternate form reliability study, students were given two forms of the test that were similar, and then the scores were correlated and tested for significance. Results from this study are reported in Table 2.

Table 2

*Alternate-Form Reliability for DORF*

Grade	DORF Single Passage	DORF Triad: Words Correct
1	.95	.98
2	.89	.96
3	.89	.96
4	.88	.95
5	.92	.96
6	.83	.92

*Note.* All correlations are significant at  $p < .001$ . Adapted from “DIBELS Next Technical Report” by R. H. Good III, R. A. Kaminski, E. N. Dewy, J. Wallin, K. A. Powell-Smith, & R. J. Latimer, 2011, p. 103.

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Additionally, reliability was established using a test-retest reliability study in which students were tested and then retested after a 2-week interval period with a second form, and the scores were correlated and tested for significance. The correlations from the study are reported by grade level in Table 3.

Table 3

*Test-Retest Reliability for DORF*

Grade	N	First Form		Second Form		Reliability
		Mean	SD	Mean	SD	
1	28	35.86	26.22	44.29	28.66	.95
2	21	102.38	27.74	113.76	28.37	.91
3	27	104.93	35.03	123.37	38.51	.93
4	21	121.14	38.49	140.14	37.09	.97
5	23	124.43	42.71	134.13	43.56	.97

*Note.* Based on middle of year data. All correlations significant at  $p < .01$ . Adapted from “DIBELS Next Technical Report” by R. H. Good III, R. A. Kaminski, E. N. Dewy, J. Wallin, K. A. Powell-Smith, & R. J. Latimer, 2011, p.103. Copyright 2011 by the Dynamic Measurement Group, Inc.

### Measurement of Other Variables

For RQ1, the independent variable was special education status. An active IEP was used to identify a student’s status as special education. Before the initiation of the IEP, the student’s status was not identified as special education.

For RQ2, goal ambitiousness was the independent variable. Goal ambitiousness was measured by obtaining information from the goals page of the IEP. First, the current baseline of the current number of words correctly read by the student was obtained. The result was then subtracted from the number of words the student was to achieve, as indicated by the goal. The difference was then divided by 36, the total number of weeks stated to obtain the goal. This number identified the expected growth for the student. If the expected growth was 1.0 word or greater per week, the goal was labeled ambitious. If the expected growth was less than 1.0 word per week, the goal was labeled not ambitious.

To address RQ3, the independent variable was the number of minutes per day receiving special education services. The number of minutes per day receiving special education services was measured by obtaining information from the service delivery page of the IEP. The total number of minutes per day the student would receive special education services related to improving reading skills was recorded. The total number of minutes did not differentiate the location of service. If a related service was included on this page, such as speech or occupational therapy, those minutes were not included in the data.

To address RQ4, the number of instructional accommodations and modifications was the independent variable. To measure the number of instructional accommodations and modifications, the program modifications and accommodations page of the IEP was referenced. The number of accommodations and modifications identified for instructional purposes was tallied.

### **Data Collection Procedures**

Before data collection, verbal support for this study from School District A was granted in May 2015 from the Assistant Superintendent of Curriculum and Assessment with the condition of having the study approved by Baker University's Institutional Review Board (IRB). Permission from Baker University was obtained by submitting an IRB form (see Appendix A). The Baker University IRB committee granted approval for the study (see Appendix B). The form was then submitted to School District A as a formal request for archived data to conduct the study. After review, the school district granted permission (see Appendix C).

Following approval, School District A's Assessment and Research Department Director was contacted to request information on students who were in second or third grade and received an initial evaluation for special education services during the 2011-2012, 2012-2013, and 2013-2014 school years. The director sent a list of students' first and last names and DORF progress-monitoring graphs that correlated with the year the students were evaluated. The Director of Special Education was then contacted to request the initial IEPs from the list provided by the Director of Assessment and Research.

Once all documents were received, the ROI in reading fluency for both pre-identification of special education and post-identification of special education were calculated to determine the change in ROI in reading fluency. All data were recorded in a Microsoft Excel spreadsheet. After all data had been compiled into the Microsoft Excel workbook, the student names were erased, and each student was assigned a number. The data was then downloaded to IBM® SPSS® Statistics Faculty Pack 23 for Windows to complete the statistical analyses.

### **Data Analysis and Hypothesis Testing**

Data from the IEP documents of each child and ROI in reading fluency data were analyzed to address each research question in this study. Multiple statistical analyses were used to test the hypotheses. The type of analysis used to address each research questions was determined by the variables.

**RQ1.** To what extent is there a difference in the change of a second or third grade student's ROI in reading fluency with the initiation of special education services?

**HI.** There is a difference in the change of a second or third grade student's ROI in reading fluency with the initiation of special education services.

A one-sample *t* test was used to test H1. The sample mean of the change of ROI in reading fluency was tested against a null value of 0 (no change in ROI). The level of significance was set at  $\alpha = .05$ .

**RQ2.** To what extent is there a difference in the change of a second or third grade student's ROI in reading fluency whose IEP goals are more ambitious and second or third grade students whose IEP goals are less ambitious?

**H2.** There is a difference in the change of a second or third grade student's ROI in reading fluency who have IEP goals that are more ambitious and second or third grade students who have goals that are less ambitious.

An independent-samples *t* test was conducted to test H2. The average change of a second or third grade student's ROI in reading fluency for students who had ambitious goals was compared to the average change of a second or third grade student's ROI in reading fluency for students who had goals that were less ambitious. The level of significance was set at  $\alpha = .05$ .

**RQ3.** To what extent is there a relationship between the change of a second or third grade student's ROI in reading fluency and the number of minutes per day of special education services received by the student?

**H3.** There is a relationship between the change of a second or third grade student's ROI in reading fluency and the number of minutes per day of special education services received by the student.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between the change of a second or third grade student's ROI in reading fluency and the number of minutes per day of special education



services received. A one-sample  $t$  test was conducted to test for the statistical significance of the correlation coefficient. The level of significance was set at  $\alpha = .05$ .

**RQ4.** To what extent is there a relationship between the change of a second or third grade student's ROI in reading fluency and the number of instructional accommodations and modifications documented in a student's IEP?

**H4.** There is a relationship between the change of a second or third grade student's ROI in reading fluency and the number of instructional accommodations and modifications documented in a student's IEP.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between the change of a second or third grade student's ROI in reading fluency and the number of instructional accommodations and modifications documented in a student's IEP. A one-sample  $t$  test was conducted to test for the statistical significance of the correlation coefficient. The level of significance was set at  $\alpha = .05$ .

### **Limitations**

Lunenburg and Irby (2008) stated "limitations are factors that may have an effect on the interpretation of the findings or on the generalizability of the results" (p. 133).

While the researcher does not have control over the limitations, explicitly stating them can assist in preventing misapprehensions (Lunenburg & Irby, 2008). Limitations of this study included:

1. The students receiving special education services were limited to the available interventions in this school district; therefore, results may not be generalized

to all school districts that do not have access to the same instructional resources.

2. Teachers may have different skill levels for writing IEPs.
3. Other variables may have affected student achievement, including absences, motivation, or appropriateness of instruction.
4. IEP minutes and accommodations and modifications may not have been followed by all teachers with fidelity.

### **Summary**

This non-experimental study evaluated the components of an IEP that may be associated with higher rates of improvement. This chapter included the research design and the selection of participants. The instrumentation used in this study, which included the measurement and reliability and validity, was described in detail, as well as the procedures for data analysis and hypothesis testing. Finally, the limitations of the study were provided. The results of this study are presented in chapter four.

## **Chapter Four**

### **Results**

The primary purpose of this study was to determine the relationship between the change in the ROI in reading fluency for second and third grade students and the initiation of special education services. A secondary purpose of this study was to determine the relationship of the change in ROI in reading fluency for second and third grade students with different IEP variables. The ambitiousness of the IEP goal, the number of minutes daily receiving special education services, and the number of instructional accommodations and modifications stated on the IEP were the variables tested. In this chapter, the descriptive statistics, the results of hypothesis testing, and the results of the additional analyses are presented.

#### **Descriptive Statistics**

During the 2011-2012, 2012-2013, 2013-2014, and 2014-2015 school years, 130 second and third grade students from School District A were evaluated for an initial IEP. Of those potential study participants, seven of the second and third grade students were eliminated from the study because they did not have an IEP goal to increase reading fluency. An additional 99 participants were eliminated because they did not have both 12 weeks of progress monitoring prior to their evaluation and 12 weeks of progress monitoring after initiation of special education services. Twenty-four participants met all of the requirements for inclusion in the sample and were included in this study. Table 4 includes a summary of the mean and standard deviation of the ROI in reading fluency 12 weeks before qualifying for special education services, the ROI in reading fluency after

receiving special education services for 12 weeks, and the change in the ROI of the participants. The descriptive statistics revealed that the mean for second grade students' ROI in reading fluency improved with the initiation of special education services. The third grade group of students' mean decreased with the initiation of special education services.

Table 4

*Descriptive Statistics for the ROI in Reading Fluency*

Grade	<i>n</i>	Pre-SPED ROI		Post-SPED ROI		Change in ROI	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
2	10	0.533	0.599	0.808	0.841	0.458	1.222
3	14	0.641	0.986	0.178	1.057	-0.464	1.329
Combined	24	0.597	0.832	0.441	1.005	-0.079	1.341

A summary of the minimum, maximum, mean, and standard deviation of minutes per day of special education services received by second and third grade students is found in Table 5. The students in the second grade group received a greater range of minutes per day of special education services received than did the students in the third grade group. Additionally, the second grade group received on average 10 more minutes per day of special education services than did the third grade group.

Table 5

*Descriptive Statistics for the number of Minutes per Day Receiving Special Education Services*

Grade	<i>Minimum</i>	<i>Maximum</i>	<i>M</i>	<i>SD</i>
2	30	150	73.500	33.504
3	45	120	63.214	19.671
Combined	30	150	72.500	29.811

Table 6 includes a summary of the minimum, maximum, mean and standard deviation for the number of instructional accommodations and modifications documented in a second or third grade student's IEP. The second grade students received a lower range of instructional accommodations and modifications documented in a student's IEP than the third grade students. The mean number of instructional accommodations and modifications third grade students received was greater than the number of instructional accommodations and modifications received by the second grade students.

Table 6

*Descriptive Statistics for the number of Instructional Accommodations and Modifications*

Grade	<i>Minimum</i>	<i>Maximum</i>	<i>M</i>	<i>SD</i>
2	2	7	4.000	1.764
3	1	9	4.429	2.593
Combined	1	9	4.250	2.251

There were observed differences between the two grade level groups related to the change in ROI, number of minutes per day receiving special education services, and the

number of instructional accommodations and modifications. These differences were addressed with additional analyses, which are reported in a section later in the chapter. The results of the hypothesis testing related to each question are explained in the following section.

### **Hypothesis Testing**

The results of the hypothesis testing conducted to address each research question posed for the current study are explained in this section. Each of the four research questions is listed with the corresponding hypothesis statement. A description of each of the analyses used to test each hypothesis is described, and the results of the testing are provided.

**RQ1.** To what extent is there a difference in the change of a second or third grade student's ROI in reading fluency with the initiation of special education services?

**H1.** There is a difference in the change of a second or third grade student's ROI in reading fluency with the initiation of special education services.

A one-sample *t* test was used to test H1. The sample mean of the change of ROI in reading fluency was tested against a null value of 0 (no change in ROI). The level of significance was set at  $\alpha = .05$ .

The results of the one-sample *t* test indicated there was not statistically significant difference between the two values,  $t = -.291$ ,  $df = 23$ ,  $p = .773$ . The sample mean ( $M = -.080$ ,  $SD = 1.341$ ) was not different from the null value (0). On average second or third grade students' ROI in reading fluency did not change with the initiation of special education services.

**RQ2.** To what extent is there a difference in the change of a second or third grade student's ROI in reading fluency whose IEP goals are more ambitious and second or third grade students whose IEP goals are less ambitious?

**H2.** There is a difference in the change of a second or third grade student's ROI in reading fluency who have IEP goals that are more ambitious and second or third grade students who have goals that are less ambitious.

An independent-samples *t* test was conducted to test H2. The average change of a second or third grade student's ROI in reading fluency for students who had ambitious goals was compared to the average change of a second or third grade student's ROI in reading fluency for students who had goals that were less ambitious. The level of significance was set at  $\alpha = .05$ .

The results of independent-samples *t* test indicated there was no difference between the two values,  $t = -.186$ ,  $df = 22$ ,  $p = .854$ . The sample mean for second and third grade students who have IEP goals that are more ambitious ( $M = -.028$ ,  $SD = 1.712$ ) was not statistically different from the sample mean for second or third grade students who have goals that are less ambitious ( $M = -.132$ ,  $SD = .908$ ). The ambitiousness of IEP goals did not affect the change of a second or third grade student's ROI in reading fluency.

**RQ3.** To what extent is there a relationship between the change of a second or third grade student's ROI in reading fluency and the number of minutes per day of special education services received by the student?

**H3.** There is a relationship between the change of a second or third grade student's ROI in reading fluency and the number of minutes per day of special education services received by the student.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between the change of a second or third grade student's ROI in reading fluency and the number of minutes per day of special education services received. A one-sample *t* test was conducted to test for the statistical significance of the correlation coefficient. The level of significance was set at  $\alpha = .05$ .

The correlation coefficient ( $r = .368$ ) provided evidence for a moderate positive relationship between the change of a second or third grade student's ROI in reading fluency and the number of minutes per day of special education services received. The results of the one-sample *t* test indicated a marginally significant relationship between the two variables,  $df = 22, p = .077$ . As the number of minutes per day of special education minutes increased, the change of a second or third grade student's ROI in reading fluency also tended to increase.

**RQ4.** To what extent is there a relationship between the change of a second or third grade student's ROI in reading fluency and the number of instructional accommodations and modifications documented in a student's IEP?

**H4.** There is a relationship between the change of a second or third grade student's ROI in reading fluency and the number of instructional accommodations and modifications documented in a student's IEP.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between the change of a second or third grade



student's ROI in reading fluency and the number of instructional accommodations and modifications documented in a student's IEP. A one-sample  $t$  test was conducted to test for the statistical significance of the correlation coefficient. The level of significance was set at  $\alpha = .05$ .

The correlation coefficient ( $r = -.200$ ) provided evidence for a moderately weak negative relationship between the change of a second or third grade student's ROI in reading fluency and the number of instructional accommodations and modifications documented in the student's IEP. The results of the one-sample  $t$  test indicated the relationship was not statistically significant between the two variables,  $df = 22$ ,  $p = .350$ . The change of a second or third grade student's ROI in reading fluency was not affected by the number of instructional accommodations and modifications documented in a student's IEP.

In this section, the research question and associated hypothesis testing methods were reviewed. The results of each analysis were described. In the following section, additional analyses disaggregated by grade level are explained.

### **Additional Analyses**

As was noted in the descriptive statistics section, there was some concern that there potentially were differences in the descriptive statistics for second and third graders. Therefore, the data was disaggregated by grade level, and the hypothesis tests were conducted on the subgroups. The results of those hypothesis tests are presented in this section.

One-sample  $t$  tests were used to test if there was a difference in the change of a second grade student's ROI in reading fluency or a third grade student's ROI in reading

fluency with the initiation of special education services. The sample mean of the change of ROI in reading fluency for each grade level group was tested against a null value of 0 (no change in ROI). The level of significance was set at  $\alpha = .05$ .

For second grade students, the results of the one sample  $t$  test indicated there was not a statistically significant difference between the two values,  $t = 1.186$ ,  $df = 9$ ,  $p = .226$ . The sample mean ( $M = .458$ ,  $SD = 1.221$ ) was not different from the null value (0). For third-grade students, the results of the one sample  $t$  test indicated there was not a statistically significant difference between the two values,  $t = -1.306$ ,  $df = 13$ ,  $p = .214$ . The sample mean ( $M = -.464$ ,  $SD = 1.330$ ) was not different from the null value (0). The results of these comparisons indicated the means for each grade level group were very different from each other, but the difference from 0 (no change) was not statistically significant for the second grade or third grade group. On average, a second student's change in ROI in reading fluency and a third grade student's change in ROI in reading fluency did not change with the initiation of special education services.

Independent-samples  $t$  tests were conducted to test for differences in the average change of a second grade student's ROI in reading fluency or third grade student's ROI in reading fluency between students in each grade who had ambitious goals and students in the corresponding grade who had less ambitious goals. The level of significance was set at  $\alpha = .05$ .

For second grade students, the results of the independent samples  $t$  test indicated there was a statistically significant difference between the two values,  $t = -2.588$ ,  $df = 8$ ,  $p = .032$ . The sample mean for second grade students who have IEP goals that are more ambitious ( $M = 1.417$ ,  $SD = 1.128$ ) was higher than the sample mean for second grade

students who have goals that are less ambitious ( $M = -.181, SD = .836$ ). The ambitiousness of IEP goals affected the change in a second grade student's ROI in reading fluency. For third grade students, the results of the independent-samples  $t$  test indicated there was no difference between the two values,  $t = .923, df = 12, p = .374$ . The sample mean for third grade students who have IEP goals that are more ambitious ( $M = -.750, SD = .1.507$ ) was not statistically different from the sample mean for third grade students who have goals that are less ambitious ( $M = -.083, SD = 1.507$ ). The ambitiousness of IEP goals did not affect the change in a third grade student's ROI in reading fluency.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between the change of a second or third grade student's ROI and the number of minutes of special education services received for each group of students by grade level. A one-sample  $t$  test was conducted to test for the statistical significance of each of the correlation coefficients. The level of significance was set at  $\alpha = .05$ .

For the second grade students, the correlation coefficient ( $r = -.195$ ) provided evidence for a moderately weak negative relationship between the change of a second grade student's ROI in reading fluency and the number of minutes per day a student received special education services. The results of the one-sample  $t$  test indicated the relationship was not statistically significant between the two variables,  $df = 22, p = .589$ . The change of a second grade student's ROI in reading fluency was not affected by the number of minutes per day special education services were received. For the third grade student group, the correlation coefficient ( $r = .499$ ) indicated a moderately strong positive

relationship between the change of a third grade student's ROI in reading fluency and the number of minutes per day of special education services received by the student. The results of the one-sample  $t$  test indicated the relationship was marginally significant between the two variables,  $df = 22, p = .069$ . The change of a third grade student's ROI in reading fluency was affected by the number of minutes per day special education services were received.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between the change of a second or third grade student's ROI in reading fluency and the number of instructional accommodations and modifications documented in a student's IEP for each group of students by grade level. A one-sample  $t$  test was conducted to test for the statistical significance of each of the correlation coefficients. The level of significance was set at  $\alpha = .05$ .

For second grade students, the correlation coefficient ( $r = .064$ ) indicated a positive weak relationship between the change of a second grade student's ROI in reading fluency and the number of instructional accommodations and modifications documented in the student's IEP. The results of the one-sample  $t$  test indicated the relationship was not statistically significant between the two variables,  $df = 22, p = .860$ . The change of a second grade student's ROI in reading fluency was not affected by the number of instructional accommodations and modifications documented in a student's IEP. For third grade students, the correlation coefficient ( $r = -.286$ ) indicated a negative moderately weak relationship between the change of a third grade student's ROI in reading fluency and the number of instructional accommodations and modifications documented in a student's IEP. The results of the one-sample  $t$  test indicated the

relationship was not statistically significant between the two variables,  $df = 22, p = .322$ . The change of a third grade student's ROI in reading fluency was not affected by the number of instructional accommodations and modifications documented in a student's IEP.

In this section, additional analyses for each grade level group of students were described. The results of the additional analyses were also explained. In the following section, a summary of the results is provided.

### **Summary**

The descriptive statistics for the 24 participants and results of each of the hypothesis tests were described in this chapter. Additionally, as a result of differences observed between second and third grade students as sub-groups, additional analyses were conducted and reported. The initiation of special education services and the number of instructional accommodations and modifications documented in a student's IEP did not have a significant impact on the change in ROI in reading fluency. The ambitiousness of an IEP goal was a significant factor in impacting the change in ROI in reading fluency, but only for second grade students. The number of minutes daily a student received special education services was positively correlated with a change in ROI in reading fluency and was marginally significant for all participants, and the sub-group of third grade students. In chapter five, a summary of the research is provided, along with major findings related to the literature, implications for further action, recommendations for future and the conclusions.

## Chapter Five

### Interpretation and Recommendations

This study was conducted to examine the relationship between the change in ROI in reading fluency of second and third grade students and the initiation of special education services. Additionally, the current study was conducted to determine the relationship between the change in ROI in reading fluency of second and third grade students with different IEP variables, which included IEP goal ambitiousness, number of minutes per day a student received special education services, and the number of instructional accommodations and modifications documented in a second or third grade student's IEP. In this chapter, a study summary, the findings related to the literature, and the conclusions are provided.

#### Study Summary

This section provides a summary of the current study. An overview of the problem is provided, followed by the purpose statement and research questions. This section concludes with a description of the methodology and major findings.

**Overview of the problem.** Students identified with a specific learning disability in the area of reading require specialized instruction beyond what is available through general education resources. Specialized instruction aligned with student need should result in accelerated learning progress (Swanson & Vaughn, 2010). However, research has shown that students receiving special education services in the area of reading progress typically at a rate that is almost half of what their peers do in the early elementary years when the rate of progress is the most easily influenced (Deno et al.,

2001). Limited research has been conducted to analyze special education services and resources provided to students related directly to the intended outcomes as stated on the IEP. Although research has been published on how to write IEP goals that satisfy state mandates (Drasgow, Yell, & Robinson, 2001), few studies have addressed the aspects of the individualized program that will drive higher levels of student performance.

**Purpose statement and research questions.** This purpose of this study was to explore the effect special education services had on the change in the rate of improvement in the area of reading fluency for second and third grade students. Additionally, this study was conducted to examine if IEP goal ambitiousness, the number of minutes per day receiving special education services, and the number of instructional accommodations and modifications documented in a student's IEP influenced the ROI in reading fluency. Four research questions were written to address the purposes of the study.

**Review of the methodology.** In this non-experimental research study, DORF progress monitoring scores for 24 second and third grade students were collected 12 weeks before the initiation of special education services and 12 weeks after services were initiated to measure what change in ROI in reading fluency was observed. The weekly progress monitoring scores from DORF were used to measure the ROI before special education identification and post-special education status. Additional analyses were conducted to test if the ambitiousness of a goal, the number of minutes per day receiving special education services, or the number of instructional accommodations and modifications influenced a student's change in ROI in reading fluency. One-sample *t*

tests, independent samples *t* tests, and Pearson product moment correlations were used to analyze the data in this study.

**Major findings.** The initiation of special education services and the number of instructional accommodations and modifications documented in a student's IEP did not have a significant impact on the change of a second or third grade student's ROI in reading fluency. The ambitiousness of an IEP goal positively impacted a change in ROI in reading fluency, but only for second grade students. The number of minutes daily a student received special education services was positively correlated with the change in ROI in reading fluency and was marginally significant for all participants and the subgroup of third grade students.

### **Findings Related to the Literature**

Included in this section are the current study's findings related to the literature. Specifically, the focus of the current study was on the change in ROI in reading fluency for second and third grade students after the initiation of special education services. Additionally, this study was conducted to determine if goal ambitiousness, number of minutes of special education received daily by the student, or the number of instructional accommodation and modifications affected a student's change in ROI in reading fluency.

The results of this study differ significantly from those found by Deno et al. (2001). In the current study, the initiation of special education services did not produce intended results for the participants, which contradicted the increase of one-word per week or more increase found by Deno et al. (2001). One major difference between the two studies was the use of an expert consult to assist teachers in making instructional decisions in response to student's progress monitoring scores. Additionally, Deno et al.



(2001) looked at the weekly gains in words read for students after 15-25 weeks of instruction, and in this study, data 12 weeks after the initiation of special education services was used. One final difference between the two studies was the current study included students who were receiving special education services for the first time, while Deno et al. did not have the same limitation on the participants. Each of these dissimilarities could provide some explanation for the differences in the results between the two studies.

The results of this study for second grade students and goal ambitiousness were consistent with the results from Fuchs et al. (1985), Fuchs et al. (1988), and Jenkins and Terjeson (2011) in that the ambitiousness of an IEP goal was related to higher achievement for second grade students. However, the results of this study also differed from the mentioned studies, because not all participants from the current study had a change in ROI in reading fluency with more ambitious goals. One major difference between the current study and each of these studies was each of the studies provided guidelines to teachers on when instructional changes had to be made in response to a student's progress monitoring scores. Additionally, Jenkins and Terjeson (2011) defined an ambitious goal as an expected growth of 1.5 words per week, which was higher than the current study in which goals were classified as ambitious that had an expected growth of 1.0 word per week growth.

From the results of the current study, it was determined that a second or third grade student's ROI in reading fluency had a moderately strong positive relationship with the number of minutes per day of special education services received and that the relationship was marginally significant. These results are consistent with the results of

the Torgesen et al. (2001) study. However, Torgesen et al. (2001) found a larger impact on the reading scores of the participants in their study than the impact on the reading scores of the participants in the current study. This difference in the number of minutes affecting a student's ROI may be because Torgesen et al. (2001) provided a specific amount of intervention time daily, and the amount of special education services received per day by a student in the current study ranged between 30-150 minutes. Furthermore, the participants in the Torgesen et al. (2001) study received intervention services individually, and the current study did not consider information about the grouping of students when a student was receiving special education services.

The results of this study did not find that the number of instructional accommodations and modifications documented in a student's IEP was a significant factor in affecting a second or third grade student's ROI in reading fluency. These results are consistent with those of Knockey et al. (2007). Not only did the current study document similar types of instructional accommodations and modifications in a student's IEP, but also the results of both studies concluded that they do not positively affect a student's academic achievement. Some of the instructional accommodations and modifications that were included in both studies included extended time to complete tests, changing the difficulty of a test, allowing someone to read tests and assignments aloud, and modified grading practices. One explanation for the number of instructional accommodations and modifications not being positively correlated with a positive change in ROI in reading fluency, is because the stated instructional accommodations and modifications and not provide more practice of the skills needed to build reading fluency, but instead limit the student's opportunities to practice the skills.

## Conclusions

In this section, conclusions drawn from the current study related to the relationship of a second or third grade student's change in ROI in reading fluency with the initiation of special education services, IEP goal ambitiousness, the number of minutes per day of special education services received, and the number of instructional accommodations and modifications documented in a student's IEP are presented. Implications for action and recommendations for future research are provided. Concluding remarks completed this section.

**Implications for action.** Matching research-based instructional practices with the specific needs of a student should result in accelerated growth in the area the student is receiving specialized service (Swanson & Vaughn, 2010). With the initiation of an IEP, which by definition should be specially designed to meet a student's individual needs, it would be expected to document accelerated growth in the academic area the IEP is addressing. However, acceleration in growth, as measured by the change in ROI in reading fluency, was not consistently documented in this study. The present study has implications for special education teachers, classroom teachers, building and district administrators, and the team who writes IEPs.

For special education teachers, the ability to monitor the progress a student is making toward an ambitious goal and adjust instructional practices is fundamental in assuring a student is making optimal progress. While monitoring the progress is required, ongoing instructional changes to the student's educational programming is not. A special education teacher must not only monitor progress but also have a plan to change an element of the program if a student is not making expected progress (Jenkins

& Terjeson, 2011). More collaboration with other special education teachers or a reading specialist who can provide guidance on what instructional changes may most benefit a specific student may be required to ensure a student's ROI is appropriate for meeting the specified goal.

For classroom teachers, the ability to provide effective reading instruction to all students is critical to ensure each child makes expected progress (Deno et al., 2001). The classroom teacher might be required to be familiar with the ROI in reading fluency of a student, so all professionals working with a student are cognizant of how instructional changes related to reading fluency are affecting the progress monitoring scores. The special education and the classroom teacher could be required to develop a plan to review data so that everyone understands what changes are needed, and who will implement those changes.

For building and district administrators, it is critical to have accountability plans to ensure every child is making expected progress, including students who require special education services. Since the progress of students in this study was not consistent, a plan for monitoring progress, and identifying teachers or teams of teachers who create plans that significantly increase the rate at which a student accelerates is critical. Additionally, since a teacher's skill level in making instructional decisions in response to a student's progress is such a critical skill to ensuring success, a plan to increase the capacity of teachers in this skill and provide on-going training is needed.

Finally, for teams who write IEPs, careful consideration should be made to the instructional accommodations and modifications in a student's IEP. In both this study and Knoockey et al. (2007), several instructional accommodations and modifications have

been shown not to have a positive impact on academic achievement. These include reading tests and assignments to the student, extended time to complete a test, and modifying tests. The reason that these instructional accommodations or modifications have not been successful is that they limit a student's opportunity to practice required skills to become a more fluent reader. Rather than providing generic instructional accommodations and modifications, more specific strategies that ensure the student continues to practice the intended skill may yield higher academic gains. Examples of instructional accommodations and modifications that could replace a read aloud could include having the student read the directions to an adult after listening to them, or have the student read the directions aloud to a peer or adult with corrective feedback.

**Recommendations for future research.** The purpose of this study was to determine the relationship between the change in a second or third grade student's ROI in reading fluency with the initiation of special education services and the way in which different IEP variables may affect the change. The IEP variables that were included in this study were IEP goal ambitiousness, the number of minutes per day of special education services received by a student, and the number of instructional accommodations and modifications documented in a student's IEP. While the present study added to the wealth of research related to this topic, more information is still required to ensure the academic outcomes for all students is optimal. The section provides several ideas for further research.

The first recommendation for further research is related to different types of IEP goals. This study only included data related to reading fluency, because it was the only measurement that data was available pre/post identification of special education for

students. More information related to specific IEP goals such as math computation, problem-solving, writing, or reading comprehension may help guide professionals in making instructional decisions for students regarding ROI. Additionally, further studies using other types of data may provide more conclusive generalizations about the initiation of special education services.

Another recommendation for further study is related to the use of ambitious goals and teacher training. Prior studies have stated that with expert guidance in using data to make needed instructional adjustments for a teacher implementing interventions in reading, the ROI in reading fluency of a student was dramatically impacted. However, the amount of support or training required for a teacher to implement such instructional decisions is not known. Understanding what level of teacher training is required to make instructional decisions could help guide the work of school districts, and the way in which they support special education teachers.

A final recommendation for further study is related to the use of instructional accommodations and modifications included in an IEP. Some possible strategies that could be evaluated for effectiveness in improving reading fluency include providing multiple opportunities to read a passage, having the student read unfamiliar text aloud and having a teacher or peer provide corrective feedback, choral reading, and echo reading. These strategies would allow the student to practice the skill of reading fluency continually, and could replace other instructional accommodations and modifications such as have an adult read aloud a test or assignment to the student that have been proven to limit a student's achievement.

**Concluding remarks.** The intent of this student was to examine components of an IEP to understand better how to maximize the educational benefit provided to students from special education services. While the results of this study added to the available research on how IEP goal ambitiousness and the number of minutes per day a student received special education services are positively related to a change in ROI in reading fluency, results are still not consistent for all students. Additionally, more research is still required to determine if these specific components of an IEP increase the ROI in all academic areas, or are specific to the skill of reading fluency.

Ensuring the success of each student must be a priority for all educators. For this to happen, there must be effective monitoring of a student's progress towards an ambitious goal that includes evaluating progress implementing changes to a student's intervention in response to their monitoring data. Experts in interpreting data and making suggestions for instructional changes may be helpful in providing guidance on specific changes. Furthermore, educators and administrators must reexamine current practices to ensure the initiation of special education services positively affects the academic outcomes for students.

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**Appendix A: IRB Form**



Date: March 4, 2016

School of education  
Graduate departmentIRB PROTOCOL NUMBER \_\_\_\_\_  
(to be USE ONLY)

**IRB Request**  
**Proposal for Research**  
**Submitted to the Baker University Institutional Review Board**

**I. Research Investigator(s)** (Students must list faculty sponsor first)Department(s) School of Education Graduate Department

Name	Signature	
1. Dr. Susan Rogers	<u>Susan Rogers</u>	Major Advisor
2. Dr. Katie Hole	<u>Katie Hole</u>	Research Analyst
3. Dr. Russ Kokoruda		University Committee Member
4. Dr. Christy Ziegler		External Committee Member

Principal Investigator: Abby Morgan Abby Morgan  
 Phone: 913-907-5999  
 Email: abbymorgan@smsd.org  
 Mailing address: 10524 Reeder  
 Overland Park, KS 66214

Faculty sponsor: Susan Rogers  
 Phone: 913-344-1226 (office) 785-230-2801 (mobile)  
 Email: srogers@bakeru.edu  
 Expected Category of Review:  Exempt  Expedited  Full

**II: Protocol Title**

Effective Practices to Write IEPs that Maximize Educational Benefit

**Summary**

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

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

The purpose of this study is to determine if the initiation of special education services impacts the rate of improvement in oral reading fluency for second and third grade students. Additionally, the purpose is to determine if the number of minutes of special education services, the ambitiousness of the IEP goal, or the number of

instructional accommodations or modifications impacts the rate of improvement in reading fluency for a second or third grade student.

The study will be completed in [REDACTED] Currently, [REDACTED] educates approximately 27,500 students annually. The district currently implements a multi-tiered system of supports (MTSS) to meet the academic and social-emotional needs of students.

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

No conditions or manipulations will be in this study.

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

Archived data from the DIBELS Next reading fluency progress monitoring for second and third grade students will be collected for this study. Additionally, the initial IEP of a student will be reviewed to collect data relating to the number of minutes the student received of special education services, the ambitiousness of the reading fluency goal, and the number of instructional accommodations and modifications provided to the student in the area of reading fluency.

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

No subjects will not encounter psychological, social, physical, or legal risk.

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

No stress to any subjects will be involved.

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

No subjects will be deceived or misled in any way.

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

There will be no request for personal or sensitive information.

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

Subjects will not be presented with materials that might be considered offensive, threatening, or degrading.

**Approximately how much time will be demanded of each subject?**

There will be no time commitment required of participants because the data is archival.

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

The data of second and third grade students who had special education services initiated during the 2011-2012, 2012-2013, and 2013-2014 school year will be analyzed to complete this study. Since the study will utilize archived data, no participants will be solicited.

**What steps will be taken to ensure that each subject's participation is voluntary? What if any inducements will be offered to the subjects for their participation?**

No steps will be taken to ensure that each subject's participation is voluntary since archived data is being used.

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

Prior consent will not be required since the data is archival.

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

No aspect of the data will be part of any record that will identify with any student.

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

Since archival data will be utilized, the fact that a subject did or did not participate in this study will not be made part of any record available to a supervisor, teacher, or employer.

**What steps will be taken to ensure the confidentiality of the data?**

To ensure data remains confidential, random numbers will be assigned to the data of each student. Additionally, confidentiality will be ensured by keeping the data on a password protected computer. The data will be erased three years after the study is completed.

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

There are no risks involved in this study.

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

Archived data from the DIBELS Next reading fluency progress monitoring for second and third grade students will be collected for this study. This data is currently stored in the DIBELS management system, and the director of assessment will assist in collecting this data. Additionally, the initial IEP of a student will be reviewed to collect data relating to the amount of minutes the student received of special education services, the ambitiousness of the reading fluency goal, and the number of instructional accommodations and modifications provided to the student in the area of reading fluency. This information is stored in the school district's online management system, and the director of special education will assist in collecting this data.

**Appendix B: Baker Letter of Approval**



*Baker University Institutional Review Board*

March 20, 2016

Dear Abby Morgan and Dr. Rogers,

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

Please be aware of the following:

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

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

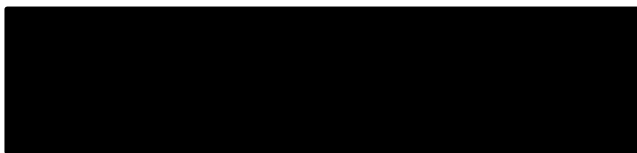
Sincerely,

*Chris Todden EdD*  
Chair, Baker University IRB

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




### Appendix C: District Letter of Approval



**FORM B**  
**Project Screening Action – District Level**

To: Abby Morgan

From:   
Director of Assessment & Research

Date: 4/18/2016

Project Title: Effective Practices to Write IEPs that Maximize Educational Benefit

Your research project has been reviewed and the project has been:

- approved
- not approved
- conditional approved based in changes to be made

Clarification/Comments:

Abby will obtain SPED data then will reach out to Dan Gruman with list of student IDs to obtain DIBELS progress monitoring data.

This project has been assigned the following number for identification purposes:

Project Number: 2016\_7\_AM

Please submit a copy of the completed project to our office.

If further clarification is needed concerning this action, please contact:

