

University of Northern Colorado

## Scholarship & Creative Works @ Digital UNC

---

Dissertations

Student Work

---

7-1-2016

### Mind the Gap: Examination of Elementary Students' Individual Education Program Goals

Shehana Alqafari

*University of Northern Colorado*

Follow this and additional works at: <https://digscholarship.unco.edu/dissertations>

---

#### Recommended Citation

Alqafari, Shehana, "Mind the Gap: Examination of Elementary Students' Individual Education Program Goals" (2016). *Dissertations*. 373.

<https://digscholarship.unco.edu/dissertations/373>

This Dissertation is brought to you for free and open access by the Student Work at Scholarship & Creative Works @ Digital UNC. It has been accepted for inclusion in Dissertations by an authorized administrator of Scholarship & Creative Works @ Digital UNC. For more information, please contact [Nicole.Webber@unco.edu](mailto:Nicole.Webber@unco.edu).

© 2016

SHEHANA ALQAFARI

ALL RIGHTS RESERVED

UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

MIND THE GAP: EXAMINATION OF ELEMENTARY  
STUDENTS' INDIVIDUAL EDUCATION  
PROGRAM GOALS

A Dissertation Submitted in Partial Fulfillment  
of the Requirements of the Degree of  
Doctor of Philosophy

Shehana Alqafari

College of Education and Behavioral Sciences  
School of Special Education  
Special Education

July 2016

This Dissertation by: Shehana Alqafari

Entitled: *Mind the Gap: Examination of Elementary Students' Individualized Education Program Goals*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in College of Education and Behavioral Sciences in School of Special Education.

Accepted by the Doctoral Committee

---

Rashida Banerjee, Ph.D., Research Advisor

---

Lewis Jackson, Ed.D., Committee Member

---

Todd H. Sundeen, Ph.D., Committee Member

---

Jingzi Huang, Ph.D., Faculty Representative

Date of Dissertation Defense \_\_\_\_\_

Accepted by the Graduate School

---

Linda L. Black, Ed.D.  
Associate Provost and Dean  
Graduate School and International Admissions

## ABSTRACT

Alqafari, Shehana. *Mind the Gap: Examination of Elementary Students' Individual Education Program Goals*. Published Doctor of PhD dissertation, University of Northern Colorado, 2016.

The purpose of this sequential explanatory mixed-method study was to gain an in-depth understanding of the processes that special education teachers used to determine reading goals for students with learning disabilities in elementary school. The first phase consisted of a quantitative investigation into existing Individual Education Program (IEP) reading goals for elementary school students with learning disabilities while the second phase consisted of a qualitative investigation involving interviews with special education teachers to explain the findings from the quantitative data analysis. The quantitative analysis included 44 IEP reading goals and the qualitative analysis, conducted through interviews, with four special education teachers. The results from the quantitative phase showed that the proportion of reading goals that met the AIMSweb guidelines in this study was 25.71%. Only 3 of 35 goals were at the mid-average percentile level (between 40th and 50th percentile). Moreover, a significant difference in the mean between current IEP goals and percentiles that were written by special education and the AIMSweb guidelines. Finally, only two goals (6.57%) were sufficient to close the achievement gap and both of these goals were written above the students' actual grade level. Five main themes emerged from the results of the qualitative phase. The first theme discussed the procedure included conduct assessments, identify student's level of performance, set up

the students' baseline, write the IEP goals, and collect progress monitoring data. The second theme was a discussion of writing goals at grade level versus instructional level. The third theme emphasized how teachers viewed the rationale of writing IEP goals and being realistic of their expectations. The fourth theme discussed current training programs that help teachers to write appropriate goals. A final theme emerged unexpectedly. Although this theme did not answer a specific research question, the information nonetheless provided important information about teachers' perspective of other factors that affect their students' achievement. Findings from this study include that teachers may need training in writing grade level goals that include instructional level objectives that meet student needs. Additionally, while the majority of the students in this study did not close the achievement gap in their reading skills, those who did had goals written above grade level. One implication is that when students are assessed below the 40<sup>th</sup>% percentile of grade level, they may need additional supports at their instructional level to narrow the gap of their foundational skills. A second implication is that when the teachers write goals at or above the students' grade level, this may contribute to closing the achievement gap. Finally, recommendations for research and practice are provided based on the results of the two phases.

## **ACKNOWLEDGEMENTS**

First and foremost, I dedicate this dissertation to my son Ibrahim, who has so admirably handled the many times his mother was so busy with her work, who has patiently waited for her to complete her task, and has remained supportive and loving throughout this process. Ibrahim, you are truly awesome!

I would be negligent if I did not express my gratitude and thanks to my parents and sisters for all they have done throughout these years as I worked thousands of miles away from them. My soul twin Shahenaz, your caring and love for me and my son are the primary reason why I am even writing this page! I would never have been able to complete this research without your help, support, and confidence.

To my friends, you have been my daily lifeline, linking me to sanity and boosting my self-esteem, always there for me no matter the situation. Especially to Haya, who unwaveringly stayed by my side, held my hand, sometimes literally holding me up, always believing in me and my abilities. We are sisters forever.

A special thanks to my advisor, Dr. Banerjee, who has been a pillar throughout this process, encouraging me, guiding me, and steering me through the complicated and complex maneuvers required to complete this dissertation and degree program. Your constant presence, even though not always physical, is an integral part of my success and achievement.

Two special tutors have gone way beyond the actions of helping me revise and edit my work, being there as mentors, friends, and surrogate mother and sister, Felicity

Spring and Christine Moe. In my darkest hours you were there; in my finest hours you were there, and all the hours in between. I thank you from the depth of my heart.

Finally, to Michelle and Eddie, you have been my American family, one that I will always belong to. Your compassion and sustaining me and my son have not only enabled us to endure and overcome the various barriers we faced, but also provided the foundation for us to thrive and grow all these years.

Underneath all of the people who have helped and supported me during this process has been the unending presence of Allah, strengthening and upholding me, giving me the fortitude and empowering me so that I could stand on my own merits and earn my doctorate. الحمد لله رب العالمين



## TABLE OF CONTENTS

CHAPTER		
I.	INTRODUCTION .....	1
	Statement of the Problem.....	2
	Purpose Statement.....	3
	Research Questions .....	4
	Significance of the Study .....	4
	Definition of Terms.....	6
II.	REVIEW OF THE LITERATURE .....	8
	Definition of Learning Disabilities and Issues in Identification .....	9
	The Discrepancy Model of Learning Disabilities Identification .....	10
	Issues with Using the Discrepancy Model to Identify Students with Learning Disabilities .....	11
	Special Education Accountability.....	15
	The Individual Education Program (IEP) .....	16
	The No Child Left Behind Act of 2001 (NCLB) .....	18
	Standardized Testing.....	19
	Response to Intervention and Identification Reform for Students with Learning Disabilities .....	21
	The Promise of Response to Intervention: Addressing Students Learning Needs .....	23
	The Impact of Response to Intervention on Student Achievement .....	23
	Providing High Quality Instruction .....	24
	Using the Response to Intervention Approach to Identify Students with Learning Disabilities .....	25
	Implementation of Response to Intervention .....	26

CHAPTER

II. continued

Addressing the Achievement Gap by Improving Student Outcomes .....28

Evidence-Based Strategies to Address the Achievement Gap.....29

Goal setting as a core strategy to address the  
achievement gap.....29

Writing educational goals for students with disabilities  
in the state of Colorado .....30

Strategies to narrow the achievement gap .....31

Developing appropriate educational goals .....33

Data-based decision making .....36

District-wide data-based strategies .....39

Ensuring that all teachers are prepared to address the  
achievement gap.....40

Family involvement .....43

Training .....43

Summary .....45

III. METHODOLOGY .....46

Introduction.....46

Review of Research Questions .....47

The Explanatory Sequential Mixed Methods Research Design .....47

Theoretical Perspectives .....49

Methods.....52

Phase 1: Quantitative Investigation .....52

Setting .....52

Sampling procedure .....52

Participants.....53

Measures .....55

AIMSweb progress monitoring system .....56

Individualized education program .....58

Procedures .....59

Data analysis .....62

CHAPTER

III. continued

Phase 2: Qualitative Investigation .....	65
Research design .....	65
Setting .....	66
Recruiting participants .....	66
Participants.....	67
Data collection methods.....	68
Conducting Interviews .....	69
Data analysis .....	70
Analyzing data into codes and themes .....	71
Ensuring Overall Validity and Reliability for the Study .....	71
Validity .....	71
Reliability.....	73
Triangulation.....	74
Rich description .....	74
Member check.....	75
Internal and external auditors.....	75
Researcher bias .....	76
Audit trail .....	77
Ethical Considerations .....	77
Informed consent form.....	77
Confidentiality measures .....	78
Storing the data .....	78
Respect for participants.....	79
IV. RESULTS .....	80
Phase One: Quantitative Findings.....	80
Research Question 1 Findings .....	81
Research Question 2 Findings .....	83
Research Question 3 Findings .....	91

CHAPTER

IV. continued

Phase Two: Qualitative Findings .....97

    Research Question 4 Findings .....99

        Theme 1: Procedures used for writing Individual  
            Education Program goals .....100

            Assessment.....100

            Establishing a baseline .....101

            Writing the reading goal .....103

            Progress monitoring .....104

        Theme 2: Writing grade level goals versus  
            Instructional level goals .....107

        Theme 3: Writing realistic goals .....110

    Research Question 5 Findings .....114

        Theme 4: Training.....114

    Emerging Unanticipated Theme .....116

        Theme 5: Factors affecting the achievement gap .....116

Summary .....120

V. DISCUSSION .....122

    Summary of the Findings .....123

    Discussion .....127

    Conclusions .....143

    Limitations of the Study.....148

    Recommendations for Practice .....149

    Recommendations for Future Research .....150

REFERENCES .....152

APPENDICES

A. Individualized Education Program (IEP) .....171

B. Individualized Education Program (IEP) Coding Rubric .....177

C.	AIMSweb National Norms Tables.....	179
D.	An Interview Guide.....	183
E.	Informed Consent Form.....	185
F.	Institutional Review Board Approval.....	189

## LIST OF TABLES

Table		
1.	Students' Demographics .....	54
2.	Individual Education Program Goals Review .....	55
3.	Summary of Procedures .....	60
4.	Individualized Education Plan Goals Data .....	85
5.	Individual Education Program Reading Goals According to AIMSweb Percentile and Goal Level .....	88
6.	Pairs Samples Statistics.....	89
7.	Paired Differences: Current Individual Education Program Goals Scores and Percentile vs. AIMSweb Goals Scores and Percentile .....	90
8.	Rate of Improvements in Different Goal .....	93
9.	Goal Achievement .....	96
10.	Paired Samples Statistics: Needed Rate of Improvements vs. Actual Rate of Improvements.....	96
11.	Paired Samples Test .....	98

## **CHAPTER I**

### **INTRODUCTION**

Learning Disabilities (LD) has been the largest disability category in K-12 education with approximately 5% of all students identified as having LD (U.S. Department of Education, National Center for Education Statistics, 2013). Traditionally, LD has been defined as unexpected low academic achievement (Baer et al., 2006; Fletcher, Lyon, Fuchs, & Barnes, 2007). Students who have not achieved equivalent academic performance with their same-grade peers in core academic subjects such as reading, writing, and mathematics despite receiving high quality instruction may be considered to have LD. An achievement gap could occur when a subgroup of students scores significantly lower on a standardized test than their counterparts (No Child Left Behind Act [NCLB], 2001).

The causes of the academic achievement gap have been many, complex, and interrelated; and these causes have varied between schools, districts, and communities. Studies have identified numerous factors that appear to contribute to the achievement gap; these have included low expectations by teachers and schools for student achievement; the lack of a rigorous and demanding curriculum; large class sizes; academic tracking of students into a less rigorous curriculum; schools that have not been safe for students or teachers; environments that have no tolerance for students who were culturally and linguistically diverse; and lack instructional leadership (Barton, 2003; National Education Association, 2015; Kober, 2001; Williams, Kirst, & Haertel, 2005).

The NCLB (2001) has led states, school districts, and teachers alike to view student achievement differently than prior to the passing of this education law. According to NCLB, schools need to achieve adequate yearly progress (AYP); those schools that fail to meet AYP could face devastating financial and organizational consequences. At individual schools, students were required to make significant academic progress for their schools to make AYP. Student achievement data were disaggregated into groups and subgroups, which included student race and ethnicity, student socio-economic background, and students with special needs.

Research has shown that the gap between students who have strong early literacy skills and those who have weak early literacy skills were rarely resolved; without intervention this gap persisted and widened as students continued through middle school into high school (Juel, 1988; Lonigan & Whitehurst, 2001). Snow, Burns, and Griffin (1998) found that students who started third grade without grade-level literacy skills only had a 25% chance of entering sixth grade with grade level reading skills. An effective strategy to increase student learning and improve learning outcomes was the timely provision of instructional interventions in early years (D. Fuchs, Fuchs, & Compton, 2012; Mather & Kaufman, 2006).

### **Statement of the Problem**

There has been a lack of research that specifically addressed the academic achievement gap between students with and without disabilities. The majority of current research literature focused on gaps between students of different races and socioeconomic status. However, there were two studies that indirectly addressed the general and special education achievement gap. In a study by Cronin, Dahlin, Xiang, and



McCahon (2009), only 2% to 6% of the schools studied found that students with disabilities met the target goals for AYP. Chudowsky, Chudowsky, and Kober (2009) found that, although there appeared to be a trend that overall students test scores increased, the discrepancy between students with and without disabilities remained very large, up to 40 percentage points in subjects like math and reading. Based on these studies, there appeared to be a significant achievement gap between students who had disabilities and who received specialized instruction, and those who did not have disabilities.

### **Purpose Statement**

The intent of this study was to gain an in-depth understanding of the processes that special education teachers used to determine reading goals for students with learning disabilities in elementary school. A sequential explanatory mixed-method research design was used to examine the extent to which Individualized Education Program (IEP) reading goals written by special education teachers were designed to address grade-level skills that were consistent with the guidelines from the progress monitoring program, AIMSweb, used by the participating school district, and the experience of special education teachers in using data-based decision making when developing goals and measuring students expected rate of progress. In this two-phase study, the first phase consisted of a quantitative investigation into existing IEP reading goals for elementary school students with learning disabilities while the second phase consisted of a qualitative investigation involving interviews with special education teachers to explain the findings from the quantitative data analysis. The sequential explanatory mixed-method research design has been selected in order to gather both quantitative and qualitative data so that

greater insight and understanding could be gained than by either kind of data separately (Creswell & Plano Clark, 2011).

### **Research Questions**

The specific research questions that were addressed in this study are:

- Q1 What proportion of Individualized Education Program (IEP) reading goals written by special education teachers for students with learning disabilities in 2nd, 3rd, 4th, and 5th grade are designed to address grade level skills consistent with the AIMSweb guidelines?
- Q2 Is there a significant mean difference between the current reading goal scores of the students delineated in RQ1 and the AIMSweb National Norms Table scores at the 40th percentile?
- Q3 For the students delineated in RQ1, does the gap between student performance in reading and the AIMSweb grade level criteria decrease sufficiently so that a goal of grade level performance is either achieved or can be reasonably projected?
- Q3 For the students delineated in RQ1, what were the processes that special education teachers used to determine student reading needs and related goals, and how did they explain their decisions?
  - a. For the students delineated in RQ1, how did teachers use existing baseline data when setting reading goals?
  - b. For the students delineated in RQ1, how did teachers use grade-level Aimsweb expectations when setting reading goals?
  - c. For the students delineated in RQ1, how do teachers define what is adequate or inadequate progress?
- Q4 What training do teachers receive regarding using AIMSweb data to establish reading goals? How does this training impact their future goal setting activities?

### **Significance of the Study**

Research has shown that students who started their school career at an academic disadvantage were more likely to finish at an academic disadvantage without ever closing this achievement gap (Juel, 1988; Lonigan & Whitehurst, 2001). This has had significant,

life-long consequences for these students, their families, and their community, including limitations on their ability to acquire employment, lifelong earnings, and their family's socioeconomic status. Consequently, ameliorating this academic achievement gap at the earliest possible time was critical for the success of students. It seemed evident that unless students were provided with early intervention and academic supports, the achievement gap may never have been narrowed.

However, there was a gap in the research about which external factors contributed the most to the achievement gap between students with disabilities and those without. Until there was research that addressed this particular achievement gap, we may not have known which factors contributed to this achievement gap, nor how we could address these effectively, thereby improving the chances for students with LD to achieve academic success commensurate with their peers. The goal of this study was to gain an in-depth understanding of the processes that special education teachers use to determine reading goals for students with learning disabilities in elementary school and how this goal setting may explain students' performance in relation to the achievement gap.

### **Summary**

Research has shown that students who demonstrate an early achievement gap in their literacy skills are unlikely to resolve this disadvantage and close the achievement gap unless they receive timely and instructional interventions in their formative academic years. In many cases, the gap not only persisted but increased as students continued on to high school. Several factors have been identified as contributing to this achievement gap among minority and low socio-economic students, including a lack of high expectations by teachers. There is a dearth of literature exploring factors related to the achievement

gap between typical grade level students and students with LD. This innovative study examines the process that special education teachers use to write annual reading goals for students with LD and to explore factors related to developing ambitious and appropriate annual goals.

### **Definition of Terms**

**Achievement gap.** An achievement gap occurs when a subgroup of students score

significantly lower on a standardized test than their counterparts (NCLB, 2001).

In this study, the achievement gap being discussed was the academic performance gap between students who had been identified with learning disabilities and who received special education services and students without special needs.

**AIMSweb.** A statistically based, formative assessment system that informs teaching and learning process (Shinn, Shinn, & Langell 2008).

**Annual Yearly Progress (AYP).** Mandated under NCLB (2001), AYP is the measure of yearly progress for students in all subgroups to meet incremental growth goals on the path of reaching the goal of all students reaching academic proficiency (NCLB, 2001).

**Individual Education Program (IEP).** An individual education program that is developed for each student with a disability who qualifies for services under IDEA IDEIA (2004) which lists goals, objectives, placement and services in order to provide the student with a free and appropriate public education (U.S. Department of Education, 2011).

**Individuals with Disabilities Act (IDEA).** Originally enacted in 1975 and most recently revised in 2004, this federal legislation was designed to ensure that children and youth with disabilities received a free and appropriate public education in the least restrictive environment.

**Lexile.** Level of the reading difficulty of prose texts, and the reading capacity of people (White & Clement, 2001)

**No Child Left Behind (NCLB).** Reauthorization of the Elementary and Secondary Education in 2001 Act which implemented standards-based reforms in an effort to increase student performance and school accountability (NCLB, 2001).

**Response to Intervention (RtI).** This is a systematic intervention that is provided to all students who are struggling in order to allow them to improve performance prior to referring into special education. Up to 15% of special education funds can be used to support RtI activities and under Individuals with Disabilities Act (IDEA) 2004 special education teams can utilize an RtI model for identification of specific learning disability (D. Fuchs & Fuchs, 2006; U.S. Department of Education, 2011).

**Teacher on Special Assignment (TOSA).** A licensed teacher assigned to perform duties other than classroom instruction

## **CHAPTER II**

### **REVIEW OF THE LITERATURE**

The term "achievement gap" has been frequently defined as a subgroup of students scoring significantly lower on a standardized test than their counterparts (NCLB, 2001). In this study, the achievement gap being discussed was the academic performance gap between students who had been identified with learning disabilities and who received special education services and students without special needs. This achievement gap has been shown to have long-term consequences for students with learning disabilities and affects not only their academic performance but also their ultimate level of education, adult employment, and lifetime earning potential (Cortiella & Horowitz, 2014; Taymans, 2011).

This chapter has been organized into five sections. The first section begins with an overview of the history of LD and includes a discussion of definitions of LD as well as what identification tools were being used to identify LD in students. This section describes two primary models of LD identification in the United States: the Discrepancy Model (DM) and Response to Intervention (RtI).

In the second section, a summary of educational accountability measures within IDEA (2004) and NCLB (2001) are provided. Student assessment data requirements under both NCLB and IDEA are discussed as well as the due process system of judiciary oversight for compliance. This section concludes with a discussion of the Individualized Education Program (IEP) as an individual accountability tool. The third section describes

the emergence of RtI as a strategy to provide support to all students through high quality instruction and timely interventions. The RtI approach could be considered a prevention model and could be used to help identify students with LD. Research related to the impact of RtI on student performance is discussed in this section.

The fourth section addresses challenges related to addressing the achievement gap. Evidence-based strategies used at schools across the United States are examined and discussed. These include early intervention, progress monitoring, team-based problem solving and appropriate goal setting for students with special needs. The fifth section discusses goal setting as a core strategy to address the achievement gap. Using data-based decision making and developing specific, targeted and effective goals on student achievement is examined. Finally, the importance of preparing teachers to effectively write goals that help students with LD narrow the achievement gap is discussed.

### **Definition of Learning Disabilities and Issues in Identification**

To better understand the issue of the academic achievement gap, an overview of the history of LD was provided to illustrate some of the challenges in developing an accurate definition of LD. Two main models for identification of LD in students was described, the Discrepancy Model and the early intervention approach of RtI.

Learning Disabilities has been the largest disability category in K-12 education with approximately 5% of all students identified as having LD (U.S. Department of Education, National Center for Education Statistics, 2013). Traditionally, LD has been defined as unexpected low achievement (Baer et al., 2006; L. Fuchs et al. 2008). Students who do not achieve equivalent academic performance with their same-grade peers in core academic subjects such as reading, writing, and mathematics despite receiving high

quality instruction may be considered to have LD. The Individuals with Disabilities Education Act (IDEA, 2004) has defined LD as:

The child does not make sufficient progress to meet age or State-approved grade-level standards in one or more of the areas identified in 34 CFR 300.309(a)(1) when using a process based on the child's response to scientific, research-based intervention; or the child exhibits a pattern of strengths and weaknesses in performance, achievement, or both, relative to age, State-approved grade-level standards, or intellectual development, that is determined by the group to be relevant to the identification of a specific learning disability, using appropriate assessments, consistent with 34 CFR 300.304 and 300.305. (CFR 300.309 (a)(2)(ii), p. 46786).

### **The Discrepancy Model of Learning Disabilities Identification**

Prior to 1975, there was no official federal definition of LD. However, with the event of the Education of All Handicapped Children Act of 1975 (EHA) (PL 94-142), criteria were established to identify students with LD. The LD identification criteria were based upon (a) whether a student did not achieve commensurate academic performance compared with his or her same-age peers when provided given appropriate educational experiences and (b) whether the student had a severe discrepancy between achievement and intellectual ability in one or more of seven areas relating to communication skills and mathematical abilities (Scruggs, 2003). However, since this time, there has been extensive debate regarding how to define and measure a severe discrepancy between achievement and IQ (Baer et al., 2006).

Starting in the late 1970s, the discrepancy model has been the main method used in the identification of LD (Hallahan & Mercer, 2002). This model was based on the idea that students with LD must show a significant discrepancy between their cognitive and achievement scores. When there existed a large enough gap between achievement and cognitive ability, a learning disability was said to have been present. In this model, a



student would typically struggle for several years of schooling before a significant gap between achievement and cognitive ability could be determined, which would then qualify the student for special education services (Speece & Case, 2001; Vaughn & Fuchs, 2003). Gresham (2009) suggested that the large adoption of the discrepancy model after 1975 was primarily due to the absence of any other accepted diagnostic model. Despite the traditional discrepancy model providing objective means for the identification of learning disabilities, there have been numerous limitations to its performance. These have included the over-identification of students with LD; the inconsistency across states in defining what was considered a discrepancy; the delay in providing services to students who were at-risk of academic failure; and issues related to the referral process, including using IQ scores and testing.

#### **Issues with Using the Discrepancy Model to Identify Students with Learning Disabilities**

Over the years, administrators, researchers, and policy makers have expressed many concerns about the discrepancy model, including the over-identification of students with LD. According to Vaughn, Linan-Thompson, and Hickman (2003), since the category of learning disability was instituted, the number of students identified with LD has increased by 200%. In fact, a national survey administered by the Advocacy Institute in 2005 found that LD constituted the single largest group of students in K-12 education receiving services under IDEA (2004; Schulz & Stephens, 2009). This extreme increase in the identification of LD has elevated concerns about the methods used to identify these students (D. Fuchs, Mock, Morgan, & Young, 2003).

Another issue with the discrepancy model was that each state had different regulations about how the label LD was applied. The United States Office of Education (USOE) has required each state to define their own levels of discrepancy. States determine levels and eligibility scores for IQ and academic achievement (Berkeley, Bender, Peaster, & Saunders, 2009). Several studies have demonstrated that there has been considerable inconsistency among states in the identification of LDs (D. Fuchs et al., 2003). For instance, students could either lose or gain classification as a student with a learning disability by simply changing their regions of residence or schools. According to Reschly (2005), there was a difference in the rate of identification of LD ranging from 2.9% in Kentucky to 9.5% in Rhode Island. Consequently, a need existed to develop a more accurate and consistent method of identifying students who required specialized instruction and interventions.

Much criticism has also been directed to the instability exhibited by the discrepancy model in not providing specific help to students in a timely manner (Carbo, 2010). Many students were not identified before they could demonstrate a significant gap between their performance and that of their peers, often around the third and fourth grades (Restori, Gresham, & Cook, 2008). Only when students were identified and placed in special education programs outside of their general education classroom did they begin to receive individualized supports and instruction. In many cases, the discrepancy model failed to provide adequate services early enough; young students below the second and third grade have often not had enough time to establish a severe enough discrepancy (Bradley, Danielson, & Doolittle, 2007).

Another concern related to the discrepancy model was the potential for bias in the referral process. Vaughn and Fuchs (2003) stated that referral decisions were often taken based on "imprecise screening through teacher observation" (p. 139). Problems with teacher referrals were discussed by VanDerHeyden and Witt (2005) who found that teachers tended to refer students for special education evaluation regardless of their absolute level of achievement; they also tended to incorrectly refer male students. The author explained that students who demonstrated non-compliant or challenging behavior were referred more often than quiet and compliant students, and that these tended to be boys rather than girls. Similarly, Vaughn and Fuchs (2003) found that teacher bias in the referral process had resulted in an under-identification of girls within the discrepancy model. In their study, VanDerHeyden and Witt (2005) found that teachers more frequently identified minority students as compared to white students as having LD. The practice of referring male students and minority students for special education evaluations had resulted in a disproportionate number of these students being referred for special education services. In another study, Gersten and Dimino (2006) discovered that teachers more often referred students who did not help with classroom chores compared to classroom helpers as having LD.

In the period following Education of All Handicapped Children Act (1975), IQ tests were considered to be accurate and objective measures of a student's intelligence; these were, therefore, used extensively to document the presence of LD (Hallahan & Mercer, 2002). Research has not been able to establish acceptable reliability between IQ and achievement scores (Reynolds, 1984). One reason for this was given by Marston, Muyskens, Lau, and Canter (2003) who postulated that, because IQ tests were so

dependent upon expressive language skills, specific factual knowledge, memory, and fine motor skills, the effect of these factors reduced the accuracy of measures of intelligence using IQ tests. Other critics have recognized that traditional IQ tests were insensitive to cultural differences and tended to over-identify minority students (De Valenzuela, Copeland, Qi, & Park, 2006). When IQ assessments were established, hypothetical explanations for the low test results of specific minority groups were put forth. For example, the IQ Deficit Theory suggested that specific minority populations had low IQ test scores due to genetic insufficiencies (Baer et al., 2006). However, this theory did not account for the chance of any deficiencies within the IQ tests themselves (Bordeaux, 1995). Adversaries of this theory challenged that IQ tests did not evaluate all features of intelligence (Nisbett, 1995). Today, most IQ tests have not been considered accurate assessments of intelligence (Vaughn & Fuchs, 2003).

Speece, Case, and Molloy (2003) argued that the use of one single point to measure a student's academic performance posed problems. Since children may display variable performance at different times, their scores on a "good day" may vary greatly with scores on a "bad day." Intelligence quotient tests have relied on a single score based on a single type of assessment. Basing access to services on a single assessment may have deprived some children of much needed supports and services.

Furthermore, criticisms have been leveled against the discrepancy model, which took significant time and resources away from effective instruction in order to carry out the assessment process (Vaughn & Fuchs, 2003). This type of testing relied on removing the student from classroom instruction in order to test specific functional skills. Additionally, many of the formal tests were time-consuming, conducted by specialists,

and not completed in a familiar environment. Classroom teachers were usually not part of the testing and often not privy to testing results, only to the final decision of the testing, reducing their ability to address their students' specific learning challenges (Vaughn & Fuchs, 2003).

The challenges of addressing the needs of students with LD in a timely manner rather than waiting for an academic discrepancy to appear have led to changes in addressing these students' needs. At the national level, education regulations requiring schools to be held accountable for student achievement have been implemented, while at a local level, districts have been changing their approach to addressing the needs of all students. In the following section, accountability measures in IDEA (2004) and NCLB (2001) are discussed in order to grasp more fully this shift in educational accountability requirements.

### **Special Education Accountability**

Education of All Handicapped Children Act (EHA) (PL 94-142) was passed in 1975 and was the first federal legislation to directly address the educational needs of students with disabilities. Important special education concepts were introduced by this law and included the right to a free and appropriate public education (FAPE) for all students with a disability, the right for students to be educated in the least restricted environment (LRE), and the IEP (Allbritten, Mainzer, & Ziegler, 2004; U.S. Department of Education, 2011). Education of All Handicapped Children Act (1975) also included a provision for federal funding of special education.

In 1990, EHA was amended to include early intervention services and transition services, and the name of the law was changed to IDEA. This new law created a

regulatory compliance framework that focused on the requirement of specific paperwork that met stated deadlines (Finn, Rotherham, Hokanson, Thomas B. Fordham Foundation & Progressive Policy Institute, 2001; Harr-Robins et al., 2012; McLaughlin & Thurlow, 2003; Skiba et al., 2008). The main focus within this compliance model was not on assuring the educational outcomes of students but rather on whether the organizational activities and processes within special education met the legal regulations (Finn et al., 2001; Harr-Robins et al., 2012; McLaughlin & Thurlow, 2003).

Individuals with Disabilities Act was reauthorized in 1997. This amendment further refined the requirements of the IEP, updated regulations regarding discipline of students with disabilities, and required that students with identified disabilities participate in statewide assessments and tests. The concept of transition planning was introduced in IDEA in 1997. The requirements for transition services marked the first legal shift away from compliance and towards a focus on positive student outcomes. In IDEA (2004), new amendments included the requirement that teachers be highly qualified and that schools use interventions that were research based for their students with disabilities. This solidified the new focus on school accountability for positive student outcomes (Cronin et al., 2009).

### **The Individual Education Program (IEP)**

The Individual Education Plan (IEP) was introduced in 1975 in the EHA. This tool was designed to help educators to plan and provide educational services for students with disabilities. However, accountability quickly became focused on compliance with legal requirements rather than on the education system's responsibility towards the students' learning (Carter & Welner, 2013). More recent educational legislature has

moved the focus away from this compliance-based model towards a focus on student outcomes (Albrecht, Skiba, Losen, Chung, & Middelberg, 2012; Finn et al., 2001; Harr-Robins et al., 2012; McLaughlin & Thurlow, 2003).

The IEP outlined the educational goals and services to be provided to students with special needs who met disability eligibility criteria. According to IDEA (2004), the core IEP components consisted of the students' present levels of achievement, annual educational goals, and accommodations and modifications that the students need to participate in their education, including any assessments and statewide testing. Specific information about the amount of time spent in special and general education settings was also required as was information about the service providers. Each of these components addressed the individual learning needs of the student. After the initial IEP, each subsequent IEP was required to provide information on the student's progress towards annual goals (NICHCY, 2013).

However, since its introduction in Education of All Handicapped Children Act (1975), special educators have found addressing the complexity and numerous components of the IEP to be time consuming and often confusing. A recent study by Scott (2012) found that many teachers felt that the demands of special education paperwork and the requirement of attending mandated IEP meetings interfered with their classroom instruction time. Completing paperwork often resulted in students being taught by paraprofessionals and reduced the teachers' power to provide instruction to their students. Furthermore, it was important to note that, although the IEP could be considered an accountability tool, there were currently no consequences for students who failed to meet their goals (Finn et al., 2001; D. Fuchs, Fuchs, & Stecker, 2010).

### **The No Child Left Behind Act of 2001 (NCLB)**

No Child Left Behind Act (2001) was a reauthorization of the previous Elementary and Secondary Education Act (1965). This educational law guaranteed that all students, including those who were underprivileged, reached academic proficiency (Chudowsky et al., 2009). According to NCLB (2001), schools were responsible not only for providing high quality instruction using evidence-based practices, but they were also responsible for the academic achievement of their students, including those with special needs. Accountability measures built into NCLB (2001) included a mandate that all students and schools demonstrate Adequate Yearly Progress (AYP). Adequate Yearly Progress was calculated annually for public school districts. Accountability measures embedded within NCLB (2001) included an annual assessment of student progress using standardized tests, linking student progress with state standards of academic content, requiring that schools use research-based instructional practices, and that all teachers were highly qualified in their content area (Peske & Haycock, 2006).

In order for school districts to meet the NCLB (2001) achievement requirements of having every student meet or surpass state standards, NCLB (2001) required that each state develop performance-based accountability systems made up of three elements. The performance-based elements included annual achievement goals, assessments for measuring the status of these goals, and criteria for judging achievement or enforcing sanctions (McDonnell, 2005). Low performing schools may face sanctions, including providing additional instruction or tutoring for students who were at risk of low achievement, implementation of specified curricula, and reduced funding if they did not increase their AYP (Zhao & Tienken, 2013). If low performing schools did not



demonstrate progress in their AYP reports, students may choose to attend another school or even school district. These accountability measures have resulted in ongoing pressure to modify educational practices in schools that failed to reach AYP standards (Giroux & Schmidt, 2004; McDonnell, 2005). With the AYP structure in place, federal regulations of student success was at a historical high (McDonnell, 2005). With the introduction of NCLB (2001) and the focus on accountability of schools, the achievement gap could not be ignored by public schools.

### **Standardized Testing**

While both IDEA (2004) and NCLB (2001) required states to gather and disseminate data on student achievement, the objectives of these education laws were often contradictory (Allbritten et al., 2004; D. Fuchs et al., 2010; Turnbull, Turnbull, Wehmeyer, & Park, 2003). No Child Left Behind Act (2001) made the assumption that all students, including students with disabilities and English language learners, had the capacity to demonstrate academic achievement on standards-based, grade-level proficiency tests. By contrast, IDEA (2004) addressed the needs of individual students with special needs and stated that students within specific disability categories had distinctive learning needs and that these students often needed specialized instruction and educational programming (Harr-Robins et al., 2012; Lauen & Gaddis, 2012).

No Child Left Behind Act (2001) drastically altered statewide testing policies and practices for all students, including students with disabilities. No Child Left Behind Act (2001) and IDEA (2004) authorized schools to include students with disabilities as a subgroup within the accountability system (No Child Left Behind Act of 2001; U.S. Department of Education, 2011). There was some evidence to suggest that high-stakes

accountability testing had led to increased student outcomes for many students in general education (Lauen & Gaddis, 2012). However, when it came to students with special needs who did not participate in the general education curriculum, research had found that grade-level testing may not have given an accurate assessment of student learning. In this case, schools must address the consequences of providing educational services to students who did not demonstrate grade-level academic achievement (Allbritten et al., 2004). Recent research indicated that, when school districts served students with disabilities, this lowered their likelihood of reaching the required AYP targets. Only 1.0% of students in a district were allowed to use alternative assessments. However, if more than 1.0% of students in a district had significant cognitive disabilities, their testing scores were included in the overall count of scores, which may impact the district's ability to reach or improve the AYP target (Allbritten et al., 2004; Harr-Robins et al., 2012).

The intention of the accountability measures inherent in NCLB (2001) and IDEA (2004) has been to improve student outcomes. Schools were directed to address students' learning needs by using high-quality instruction, frequent and ongoing assessments, and using data-driven decision making, thereby narrowing the achievement gap between low-performing and high-performing students within all student populations, not just between majority and minority students. Students with LD, who received instruction within the general education classroom with supports from special education, had the opportunity to improve their academic achievement when they were provided with highly qualified teachers, evidence-based instructional strategies, and data-based individualized educational planning (D. Fuchs & Fuchs, 2006). One approach to the increased

accountability within schools has been the implementation of RtI, with a focus on delivering high quality instruction, as well as evidence-based interventions and strategies to address student needs and identify students with specific disabilities.

### **Response to Intervention and Identification Reform for Students with Learning Disabilities**

In 2004, with the reauthorization of IDEA, RtI was identified as one method school districts could use in identifying the presence of disabilities in students, as mandated by the Child Find principle, as well as determining the services and supports they required and received (Martin, n.d.). Response to Intervention was an integrated, school-wide approach of service delivery across general and special education that promoted successful school outcomes for all students. The RtI approach was in stark contrast to the previously used discrepancy model; instead of waiting for a discrepancy to emerge, schools that adopted an RtI approach actively implemented specialized interventions and services based on assessment and applied stringent progress monitoring to determine students' performance levels (Hursh, 2007).

Response to Intervention was typically a three-tiered approach for providing services and interventions to all students. Within the RtI model, all students were screened in kindergarten, and their academic progress was assessed regularly so that those students who did not seem to be making adequate progress could be provided with interventions immediately, before they had a chance to fall further behind. Students started by receiving instruction in the general education classroom where their progress was monitored. Students who failed to respond to this instruction (Tier 1) received additional support from their classroom teacher and specialists (Tier 2). Again, their

progress was monitored and those who still did not respond to instruction qualified for further intervention support, a special education evaluation, or special education (Tier 3). As students moved through the tiers, the intensity of the interventions they received increased. This approach was intended to limit academic failure in general and special education by using a preventive model of early intervention (IDEA, 2004).

In essence, RtI was a twofold system of reliable high-quality instruction and frequent formative assessment of student progress (Mellard, Byrd, Johnson, Tollefson, & Boesche, 2004). Hence, RtI involved systematically evaluating the cause and effect relationship between an academic or behavioral intervention and a student's response to the intervention (Brown-Chidsey & Steege, 2005). Response to Intervention activities were rooted in well-documented special education practices and early reading intervention research (Graner, Faggella-Luby, & Fritschmann, 2005).

Response to Intervention models offered a number of hopeful benefits: (a) identification of students using a risk rather than a deficit model, (b) early identification and instruction of students with LD, (c) reduction of identification bias, and (d) a strong focus on student outcomes. Therefore, students' response to instruction and interventions could encourage efficient instructional practices as well as assist in accurate identification and appropriate interventions for students with LD (Vaughn & Fuchs, 2003).

Interventions did not depend on the IQ of a student and the student did not have to be labeled LD to receive instructional support. Because it was a preventative approach, RtI had the potential to reduce the number of students referred to special education and recognized students who were low achieving (Baer et al., 2006). The National Research

Council on Learning Disabilities (NRCLD, 2006) recommended using RtI procedures to increase students' academic growth and decrease student problem behaviors.

### **The Promise of Response to Intervention: Addressing Students Learning Needs**

Literature within the RtI field acknowledged a substantial amount of debate and concern regarding the practice of RtI in schools. Concerns included whether or not the RtI approach was an effective method for increasing student achievement through high quality instruction, whether it had the power to accurately identify students who had a learning disability, and how consistently RtI was being implemented across schools.

### **The Impact of Response to Intervention on Student Achievement**

The study of RtI and the influence of this approach on student achievement has been an essential area of interest for education research (Bradley, Danielson, & Doolittle, 2005; D. Fuchs & Fuchs, 2005; Marston, 2005; Mastropieri & Scruggs, 2005). A number of studies examined the impact of an RtI approach on academic achievement or student performance; results indicated that the tiered instructional levels used in RtI resulted in positive academic progress for most students. Research suggested that a tiered early intervention approach could improve the academic performance of at-risk students (Berkeley et al., 2009; D. Fuchs et al., 2012; Learning Disabilities Association of America [LDA], 2010; Mather & Kaufman, 2006; Mellard, McKnight, & Woods, 2009; Schatschneider, Wagner, & Crawford, 2008).

The majority of studies that explored the influence of RtI on academic achievement focused on reading programs related to early reading skills for students at the elementary level. Within the field of RtI as an educational program, only two math

studies have been conducted (Ardoin, Witt, Connell, & Koenig, 2005; Duhon, Mesmer, Atkins, Greguson, & Olinger, 2009); however, due to the very small sample sizes in these studies; the findings could not be generalized. D. Fuchs and Fuchs (2006) claimed that the focus on research-based reading programs was not accidental; RtI policy makers concentrated on reading as a central priority within this approach. As with many educational interventions, more longitudinal research was required in order for professionals to be convinced that RtI was a helpful intervention approach for all students. Additionally, more research was needed to determine the efficacy of interventions in content areas other than reading (Hughes & Dexter, 2011).

### **Providing High Quality Instruction**

Response to Intervention supporters frequently highlighted the magnitude of high-quality instruction in the general education environment. For instance, in a study on the statewide implementation of RtI, Callender (2007) found that, before students were identified as needing a specific intervention, it must first be determined that the instruction within the regular education classrooms was considered to be “high-quality.” Individuals in a decision-making position must guarantee that students with any questions were given appropriate opportunities to learn. Additionally, researchers argued that the “quality” of instruction could be reviewed quantitatively by evaluating student outcomes across classrooms at the same grade level (Callender, 2007).

Coleman, Buyss, and Neitzel (2006) reviewed the efficacy of the RtI model for identifying school-age students who were at-risk for learning disabilities. The goal of this review was to highlight pre-referral prevention and intervention practice, and determine whether RtI was effective in supporting the unique needs of all learners. Findings

suggested that, although there was variability in the selection of interventions used, as well as the intensity and duration of these interventions, the RtI model was effective in using sound evidence-based instructional practices to address student needs. In other studies, Petursdottir (2006) reported that early intervention supports had the capability to not only help students with disabilities but could reduce reading failure for a large population of struggling readers. Thus, the RtI approach appeared to benefit all students, not just those who demonstrate a noticeable achievement gap (Webb, 2007).

### **Using the Response to Intervention Approach to Identify Students with Learning Disabilities**

According to Hughes and Dexter (2011), RtI had a limited research base that supported its capability to address the issues of over-identification, disproportional, reliability, validity, and consistency in identifying students with LD. The RtI approach provided information about the academic and behavioral achievement levels of students and has been useful in identifying students who were at-risk of academic failure. Mather and Kaufman (2006) explained that RtI approach had the power to provide teachers and administrators within the education field with information regarding both “*what*” students have learned and “*how well*” have they learned it; however, RtI did not accurately identify “*why*” the student was experiencing difficulty. If a student did not respond positively to a treatment, the next reasonable question was: “*Why* was the selected intervention ineffective with a student?” This diagnostic information was necessary for instructors so they could focus on precise ways to adapt, modify, and apply differentiated instructions.

While the RtI approach could identify low achievement among students, it did not take into account the diverse linguistic and neuropsychological functions that motivated academic performance--*why* students experience academic challenges--nor did RtI present apparent foundations for selecting alternative types of instruction. Mastropieri and Scruggs (2005) posed an important question: If RtI could not discriminate, how could it classify? The need for diagnostic information on which to develop instructional programs for students who needed supports remained (L. Fuchs & Fuchs, 2003; Shinn, 2006). As Kaufman, Lichtenberger, Fletcher-Janzen, and Kaufman (2005) explained:

There is a demand for the comprehensive assessment to drive intervention. This is the way it has always been, and this is the way it will always be because the referral questions for children with SLD have always asked, What is wrong? And how can we help? These questions demand differential diagnosis, a large part of which is determined by the cognitive abilities present in the individual child. (p. 211)

### **Implementation of Response to Intervention**

Response to Intervention was not a single unanimous approach at this time, and schools across the U.S. have implemented RtI, as well as portions of RtI, differently. Orosco and Klingner (2010) stated that RtI was introduced through IDEA (2004) before there was sufficient information about how to practically implement this new approach. Even after guidelines had been developed by educational agencies and organizations, and RtI had been implemented in many schools, many educators often felt that the guidelines did not address the unique challenges they faced, especially with diverse students (D. Fuchs et al., 2012).

To illustrate this, in a survey of how administrators viewed RtI, Wiener and Soodak (2008) found that administrators were confused about the purpose of RtI. Around



10% of the surveyed administrators thought RtI was a special education initiative and that implementation would require collaboration between general education and special education teachers. However, most administrators considered RtI as a general education initiative which general education teachers would implement. Many administrators had questions about implementing RtI methods in practical and effective ways. It was worth noting that early research that examined the efficacy of RtI interventions often found that the success of the interventions was a result of instruction and interventions provided by the research teams rather than school personnel (Orosco & Klingner, 2010).

Thus, the RtI approach has been shown to document the existence of low-achievement scores among students, including those who were at risk of academic failure (Baer et al., 2006; Berkeley et al., 2009; L. Fuchs & Fuchs, 2003). D. Fuchs and Fuchs (2005) suggested that RtI was an effective tool for identifying the presence of learning disabilities; however, other researchers noted that, while RtI may identify low achievement, the process could not be used to determine the cause of the low achievement and was, therefore, not effective as an LD assessment tool (Kavale, Holdnack, & Mostert 2005; Lichtenberger, Fletcher-Janzen, & Kaufman, 2005). In addition, RtI was an educational approach that predominantly focused on student learning rather than on identifying interventions (Mastropieri & Scruggs, 2005). At this time, more research could be needed to determine the efficacy of specific interventions (Gersten, Schiller, & Vaughn, 2000).

Research on RtI has determined that this approach was very effective in identifying students who needed additional academic support, as well as in providing early intervention to students regardless of disability identification. Response to

Intervention has been determined to improve the level of student performance, particularly in the subject of reading. However, there was a lack of research showing that RtI had been effective in addressing the achievement gap.

### **Addressing the Achievement Gap by Improving Student Outcomes**

The achievement gap, the persistent difference between academic performances among student groups, has existed over many generations, between several groups of students and was an increasing concern in the United States as schools struggled to be more accountable for student learning and increased test scores. In the United States, providing equal education opportunities to minority students was not addressed until landmark legal cases brought these inequalities due to racial segregation to the attention of the education system and policymakers (Patterson & Freehling, 2001).

In recent years, the way the achievement gap had been defined had shifted from focusing exclusively on African-American and minority students to other disadvantaged student populations (Edsource, 2004). Factors such as historical inequalities and segregation, national reports describing discrepancies in achievement, and illustrating the achievement gap, judicial cases, as well as the current focus on educational accountability have all combined to highlight challenges related to the achievement gap that exists in schools today (EdSource, 2004; Harris & Herrington, 2006; Lee, 2002).

Research has found that there were a number of external and internal contextual factors involved in addressing the achievement gap between minority and non-minority students (Williams et al., 2005). While external factors included students' socioeconomic status and family environment, internal factors were related to instructional excellence and how funding was used within schools. The internal factors that have been found to

contribute to closing the achievement gap included effective leadership in terms of district, site and distributed leadership teams, prioritizing student achievement by holding high expectations for all students by every stakeholder, implementing a standards-based curriculum with effective instructional practices, using assessment and other measurable data to meet student needs, and having highly-qualified teachers (Williams et al., 2005).

Furthermore, research has shown that, when students from minority and low socio-economic backgrounds were provided with high expectations, extended learning time, and instructional persistence, the academic performance gap frequently decreased (Welner & Carter, 2013). However, the primary focus of achievement gap research has been on decreasing the performance gap between white students and students from minority and low socio-economic backgrounds (Welner & Carter, 2013). During the course of this literature review, not a single study was found that addressed improving student outcomes between students with LD who received special education services and students without this disability identification.

### **Evidence-Based Strategies to Address the Achievement Gap**

**Goal setting as a core strategy to address the achievement gap.** Goal setting by teachers and providing effective feedback to students have been core strategies in a problem-solving educational model that focused on identifying students' educational needs and setting goals to address these needs. "A key part of a problem-solving process is the setting of goals for expected outcomes that provide the framework within which potential solutions to problems are evaluated" (Shapiro, 2008, p. 142). The first step when it came to setting goals was to identify goals that were appropriate and specific. For students with LD, setting goals at the level of individual students allowed educators to

provide specific, targeted instruction and determine the impact of these interventions on student outcomes (Shapiro, 2008). In this section, the practices of goal-setting and providing effective and appropriate feedback are described in detail.

**Writing educational goals for students with disabilities in the state of Colorado.** In the U.S., each state has been responsible for developing the academic standards for K-12 education. These educational standards have reflected the grade level expectations of what students must know and demonstrate by the last day of each grade. State educational standards reflect not only required students' knowledge and skills but also the vision of what future skills students were expected to need once they graduated from K-12 education (Darling-Hammond, 1994). The State of Colorado has developed educational standards for 10 content areas. These included reading, writing and communication; mathematics; science; social studies; world languages; health and physical education; and content related to the arts: music, dance, visual arts, and theater arts. Students who have disabilities are expected to meet grade-level state standards on par with typically performing students with the exception of those with significant intellectual disabilities. Extended Evidence Outcomes (EEOs), which are related to grade-level standards yet required less from students in terms of amount and/or depth of content, have been developed specifically for this population. Additionally, the State of Colorado has developed standards for English language learners, the Colorado English Language Proficiency standards (Colorado Department of Education, 2015).

For students with disabilities, IEP team members determine the goals within each content area to prioritize. This determination is based on an assessment of the student's unique learning needs; the majority of students with disabilities will not require specific

annual goals in every content area or for each grade-level standard. Annual goals are written to ensure that students with disabilities make reasonable progress within the IEP year when provided with specially designed instruction and appropriate accommodations. Annual goals define the specific skills which students need to narrow the gap between their current performance and grade-level performance. According to the Colorado Department of Education (2016),

Each goal addressing a critical need must be properly aligned with the present level of academic achievement and functional performance. Goals identify the area(s) in which a student with a disability needs specially designed instruction and/or related services targeted to build essential skills that will facilitate participation and progress in the general education curriculum. There is no one specific method of constructing an annual goal; the unique needs of the student drive that decision. (p. 29)

However, it is worth noting that while it is expected that annual goals are developed based on the individual student's unique need for support and specialized instruction in addressing targeted skills, teachers are still expected to write goals according to grade level standards. The only exception is for those students with a significant cognitive disability whose progress can be determined based on alternate standards of achievement (Colorado Department of Education, 2016).

**Strategies to narrow the achievement gap.** One significant difference between general education and special education is that, while most students in general education classrooms work on grade level goals at a commensurate level with their peers, most students in special education often work on individual goals based on benchmarks (AIMSweb, 2012). Benchmarks are learning targets that are aligned with state standards but are expressed for a range of grades; for example, grades 3-5. In addition to standards-based, grade-level expectations, special education focuses on individual goal setting for

each student. Special education teachers used formative assessments as well as summative data to develop individualized education plans and to set specific learning goals for students with disabilities.

Basically, when teachers need to establish an IEP, they need to use recent, cumulative data based on student observation and assessments. This comprehensive assessment of the student's needs must then be linked to the relevant content standard or targeted benchmark to create authentic, rigorous learning goals (Curran & Reivich, 2011; Shapiro, 2008). A best-practice model for setting educational goals is the SMART goal framework. Each letter within the acronym stands for a specific requirement: SMART goals need to be strategic/specific, measurable, attainable, results oriented, and time bound (DuFour, DuFou, Eaker, & Many, 2010). SMART goals are precisely articulated learning goals that focus on clearly delineated objectives promoting the specific instruction and supports necessary for positive learning outcomes for students. Moreover, precisely expressed goals allow teachers to monitor the student's progress and use this data to make decisions about instructional interventions and other supports. Additionally, precisely written goals provide information to other stakeholders, including parents, administrators, and therapists, about the level of knowledge and skills the student was expected to acquire by the end of the goal period. Finally, precise goals provide information to new teachers about the conditions and supports which the student required to be successful (Lignugaris-Kraft, Marchand-Martella, & Martella, 2006).

The following section describes several evidence-based strategies that have been used to improve student outcomes at schools across the United States. While there have been a number of strategies that have been used many of these addressed issues related to

cultural differences, poverty, and challenges unique to inner-city schools. As the focus of this literature review is the discrepancy in academic achievement between students with LD who receive specialized services and students who do not require such services, the strategies discussed here reflect addressing academic achievement rather than environment or enrichment. These strategies included developing appropriate educational goals, data-based decision making, and preparing teachers to address the achievement gap through ongoing training and professional development.

**Developing appropriate educational goals.** In order to develop effective individual learning goals for students with disabilities, special educators must use a four step approach. First, the teacher must have an accurate picture of the student's current skill level as well as unique learning needs. Second, the teacher must determine which skills to target and the level of performance expected by the student. Then, the teacher must determine the duration of the goal period, and finally, the teacher must identify the standard used to measure student success.

In order to gain an accurate idea of the student's achievement, assessment is key (Bateman & Linden, 2006; Yell & Stecker, 2003). Many students with learning disabilities perform at less than average of their actual grade level (Baer et al., 2006; Fletcher et al., 2007). In order to determine the student's instructional level, which is the grade level where they demonstrate academic success, students need to be assessed at successively lower levels of grade-level curricula until their instructional level is determined. Students whose instructional level is below the 10<sup>th</sup> percentile of grade-level achievement will likely need specialized instruction to meet targeted goals in order to master essential below grade-level skills (AIMSweb, 2012).

According to L. Fuchs, Fuchs, Hamlett, Walz, and Germann (1993), special educators thus have three available choices when writing goals, based on their assessment of student performance. The first is to write goals at the students' actual grade level. This is appropriate for those students who perform above the 10th percentile at grade level and who can reasonably be expected to make adequate progress given grade level instruction. These types of goals are designed to help students catch up with grade level instructions. A goal that is designed to rank the student between the average or above average (50th and 85th percentiles) will be labeled "*Closes the Gap*" because it will raise the student's score-level percentile. Goals that are designed to rank the student above the 85th percentile will be labeled "*Ambitious*" to signal to the user that such a rate of improvement is relatively rare.

The second choice is to write goals below grade level for students who show a significant gap in performance. Students who score below the 10th percentile at their grade level, and whose identified instructional level is below grade level may benefit from these goals. Although these students' expected improvement will remain below grade level average and their percentile rank is not expected to improve significantly, these goals serve to identify and target critical prerequisite skills which are required of the students to make academic progress. The third choice is to write goals above grade level. This is appropriate for students who are performing above the 10th percentile at grade level and whose IEP will carry over into the next grade level by at least one semester.

While content area goals are written to reflect grade level standards of achievement, short-term instructional objectives that address the specific conditions,



behavior, criteria and evaluation procedures that will be used to determine the student's progress, can be written at the student's instructional level (Bateman & Linden, 2006; Drasgow, Yell, & Robinson, 2001; Yell & Stecker, 2003).

If goals are developed to reflect a student's highest instructional level, progress monitoring should also be conducted at that level to determine the student's actual performance. Shapiro (2008) stated that "A student who is functioning below enrolled grade level will demonstrate little progress over time if monitored at levels that exceed his or her instructional level" (p. 148). Thus, both goals and the way these goals are measured should reflect student achievement rather than the student's grade level alone.

The time frame for IEP goals is generally one academic year (or the anniversary date of the last IEP meeting). Research suggests that long term, annual goals reflect student growth better than short term goals or objectives (Yell & Stecker, 2003). By ensuring that goals are measurable, special educators can monitor student progress most accurately and make needed instruction adjustments to keep students on track to achieve them (Bateman & Linden, 2006). The overall goal for students with disabilities is to provide them with appropriate interventions and supports so they can achieve proficiency at their actual grade level. However, for students with disabilities who are performing lower than grade level, the magnitude of improvement may be limited, either in terms of content acquisition or growth rate. Yet, in order for students with disabilities who perform below the grade-level average to narrow the achievement gap, their rate of improvement (RoI) is often expected to be faster than that of their typical peers. In addition to providing specialized instruction and individualized supports, special educators need to identify their students' needed RoI when writing goals in order to

accurately determine student progress towards grade-level achievement (L. Fuchs et. al., 1993; Yell & Stecker, 2003).

Research into goal setting has found that teachers often expected less of students who demonstrated lower performance (Marzano & Waters, 2009; Odden, 2009; Odden & Archibald, 2009). Unfortunately, this cycle of low expectations has effected academic outcomes and perpetuated the achievement gap for students with disabilities (Shapiro, 2008). Teachers who did not have high expectations for their students may develop inappropriate goals or goals that did not meet grade level standards, the IEP team may not provide an appropriate level of services, and the students' learning needs may not be met, making it difficult for the student to make progress. When teachers did not develop specific and measurable goals, it could be challenging to determine if the student had made progress. By developing goals that reflected high expectations for student learning and monitoring student progress, teachers could determine whether their interventions were effective or need to be adjusted. "Clearly, setting goals that are realistic yet challenging are crucial to making the ongoing decisions within a problem-solving model" (Shapiro, 2008, p. 142).

**Data-based decision making.** The goal of data-based decision making has been to increase student outcomes. While data-based decision making has been a systematic approach to using student data, the focus has been to determine the effectiveness of instructional activities and continually improve instructional approaches to support student learning and academic performance (U.S. Department of Education, 2008). Research has shown that teachers who used student data to guide and update their instructional approach were more effective than those who did not make use of these data

(LaRocque, 2007). Furthermore, schools that used data in a practical and purposeful manner have been shown to improve student learning outcomes.

Progress monitoring has been the main technique through which teachers made determinations of whether or not students were benefitting from the typical instructional program (D. Fuchs & Fuchs, 2006). Ideally, progress monitoring should be sensitive to the diversity among students, both in terms of their cultural and linguistic diversity and in terms of the variability in their learning styles. Progress monitoring has also been used to guide effective intervention practices for the students who failed to benefit from typical instructions, adjusting instructional techniques to meet the individual needs of students (Hughes & Dexter, 2011; Fuchs & Stecker, 2003).

Data from progress monitoring has helped inform teachers about student performance as well as the success of classroom interventions. Using data-based decision making has assisted teachers in making changes to their instructional strategies and has delivered appropriate and effective interventions to students who struggled in the classroom (Kratochwill, 2008). It has been critical that teachers understand how to use progress monitoring data to determine individual student learning goals in order that students receive the support necessary to narrow the achievement gap (LaRocque, 2007). Accurate and ongoing progress monitoring has enabled teachers to make informed instructional decisions at the individual and classroom levels (D. Fuchs & Fuchs, 2006). Research has indicated that using formative assessment was an effective tool for teachers to use to support student achievement (DuFour et al., 2006; Odden & Archibald, 2009; Stiggins & DuFour, 2009). Formative assessments permitted teachers to provide timely feedback related to the contents being learned (Marzano, 2003). Progress monitoring

gave teachers information about student achievement and (ideally) led to data-based decision making about next target goals. Research has found that there was a connection between effective goal setting, feedback, and student outcomes (Conte & Hintze, 2000; Hattie, 2009). However, goal expectations need to be succinct and assessable with suitable progress (Clark & Estes, 2008). If goals are too extensive and abstract, lack of success and efficiency were evident in the results (Shapiro, 2008). When setting goals, it is vitally important that educators begin this process with soaring expectations (Marzano, 2003).

Defining the intensity of the instructional program is very significant decision of the teacher to make to manage the goal. In 2012, Christ, Zopluoglu, Long, and Monaghan, using a large database of student achievement data, conducted a study was conducted to explore which particular factors that affect the number of administrations needed to make the most accurate prediction of the goal achievement, as well as the ideal amount of time in order to evaluate the exactness expecting of the true grade from the observed grade. According to these researchers, the principle finding recommended that the average of about 14 weekly of intervention would be required to get the most accurate predictions. In addition, Shinn, Good, and Stein (1989) also found in their study that the AIMSweb research showed that 10-12 weekly administrations are adequate to achieve most accurate predictions of successful goal. The search of this topic is continuing with further feedback in the data collected to gain better understanding of the relationship between the progress monitoring duration and the prediction accurate. The result showed that the minimum of 7-10 data points are needed to get a right decision regard student improvement. The accuracy of decisions about students' rates of progress should be

increased with each data point. However, teachers can have made reliable judgments about student progress with 7-10 data points but 12-15 data point should consider as more accurate judgment. In addition, testing more than 2 times per week will lead to inaccurate decision and no benefit could be achieved with this small number of testing.

Another study of L. Fuchs et al. (1993), explained that the most current four consecutive scores were: If the resent 4 consecutive CBM scores are over the goal-line, at the end-of-year of the student's performance goal should be increased. If the resent four consecutive CBM scores are under the goal-line, the teachers should change or revise the instruction program. The decision rules that based on the trend-line were: If the student's trend-line is sharper that the goal-line, the end-of-year for the student performance goal should be increased. If the student's trend-line showed that is flatter than the goal-line, the teachers should change or revise the instructional program. If the student's trend-line same as the goal-line, no changes has to made.

**District-wide data-based strategies.** Before student performance data could be used to make any decision, the types of data to be collected and the goals for its use need to be delineated clearly. In a study by Armstrong and Anthes (2001), the use of data-based decision making was examined in six school districts located in five states. Each of these school districts demonstrated significantly increased student achievement once they implemented data-based decision making strategies. The school districts collected three main types of student data: achievement data, instructional method data, and demographic data. Data-based strategies included using assessments to place students at the start of the school year and to determine student learning at the end of the year, providing intensive instruction for struggling students, and identifying specific learning

benchmarks. Additionally, by providing a range of instructional strategies, teachers were able to more clearly address the variety of learning styles displayed by their students.

Armstrong and Anthes (2001) also identified characteristics of school districts that have used data-based decision making strategies successfully. Among these were strong and supportive leadership, a clear process for using data-based decision making to improve student outcomes, and ongoing training and support of teachers to use student data effectively.

**Ensuring that all teachers are prepared to address the achievement gap.** In order for teachers to be able to improve student outcomes, challenges to their performance must first be identified and rectified. According to Clark and Estes (2008), three key factors need to be investigated in order to rightfully identify performance gaps: teachers' knowledge and skills, their motivation, and organizational gaps. Teachers' knowledge and skills are fundamental when it comes to increasing student achievement; ensuring that they were well-prepared to meet the needs of every student was critical for the organization. However, as teachers have faced new challenges in the workplace, they may have demonstrated knowledge and skill gaps. In order to increase teacher efficacy in an ever-changing workplace, school districts need to identify the challenges teachers face and address these through professional development. Thus, it has been critical that districts articulate clear and specific goals for their teaching staff and outline a process to address student learning needs. Without clearly identifying the problem and setting specific goals at the macro level, organizational goals could not be achieved (Clark & Estes, 2008).

A major strategy aimed at improving student performance has been providing systematic, intensive, and continuous professional development for teachers (Odden, 2009). In a discussion of district-level strategies that have been shown to positively affect student outcomes, Odden and Archibald (2009) found that well-planned professional development programs were key to ensuring that teachers understood and used effective instructional strategies. The goal of professional development has been to change classroom practices, teacher attitudes, and student learning outcomes (Supovitz & Turner, 2000). Opportunities to participate in professional development that have provided effective and useful information to address student needs have been shown to have a positive and constructive influence on teacher efficiency (Bellini, Henry, & Pratt, 2011). However, it has been critical that the professional development being offered was relevant to teacher needs.

Effective professional development has been aligned with the needs of participants, continuous, and job-embedded and supported with opportunities for practice, feedback, and reflection. Furthermore, when professional development instruction has been targeted to the skill and knowledge level of participants and included social interaction, teachers could transfer skills learned through professional development opportunities to their instructional practice (Jenkins & Yoshimura, 2010).

Characteristics of effective professional development also have included providing teachers with opportunities to be involved in planning and to provide time for planning, away from regular teaching responsibilities. Effective development training has included pupil-free days, the use of instructional coaches, and collaborative time during the day (Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009). Professional

development that had been intensive and relevant to teachers' planning and practice has been shown to have a positive impact on student learning. However, when teachers participated in intensive professional development that was supported by coaching and mentorship, the impacts on student outcomes were stronger. By providing opportunities for job-embedded, collaborative learning, schools could increase the impact of the professional development offered. In their report about professional development for teachers across the world, Wei et al. (2009) found that, while most professional development opportunities in the U.S. focused on teachers' academic and content knowledge, it was less common that American teachers experienced the extended learning communities that have the largest impact on student learning. Thus, districts need to assess the effects of the professional development opportunities provided. "In order to provide teachers adequate professional development, local education agencies not only need to ensure that they are providing strong levels of support, but they also need to measure outcomes of professional development programs" (Bellini et al., 2011, p. 58).

In addition to the three strategies described above, all of which have been shown to improve student learning outcomes in the general education population, there was another strategy which special educators in particular used to address student learning needs. Goal setting was a core strategy used by educators to address the achievement gap between students with special needs and students without special needs. In the following section, the importance of effective and appropriate goal setting on student achievement is examined.



**Family involvement.** Numerous research studies have shown the significance impact of home support for disadvantaged students (Becker & Luthar, 2002). Parents who are involved in their children schooling, their children showed better academic performance (Barton, 2003). A positive relationship with the student's family is necessary to improve the student's motivation, achievement, and educational goals. However, parental involvement in schools with enrollments of students from high income are more likely to be higher compared to schools with high enrollments of minority or low-income children (Barton, 2003). Home environment has a huge impact on students' academic achievement. Students who have parents that supervise and encourage them to read at home and provide resources in the home, such as books, computers, and internet access usually show more achievement improvement (Kober, 2001).

**Training.** Haycock (1998) identified three areas that school districts needed to work to improve in order to close the achievement gap between majority and minority students; teacher quality, the curriculum used, and increased educational standards. Research has shown that the classroom teacher is the single most important factor affecting student achievement (Mantel, 2005; Marzano, 2003; Haycock, 2001, 1998; Rivers & Sanders, 1996). Therefore, ensuring that teachers are trained to address all the challenges they meet in their ever-changing workplace is vital to improving student outcomes. It is imperative that teachers understand how to use student data to make the instructional decisions that result in high student achievement. School districts that use data-based decision making effectively have similar characteristics. These include a strong leadership that actively works to support classroom teachers, procedures that are directly linked to improving student outcomes through the use of data-based decision

making, and effective, ongoing support and professional development that teaches teachers to use student data to make effective decisions (Armstrong & Anthes, 2001). The theme of providing effective professional development has been repeated numerous times in the research literature. Just as in classroom instruction, professional development needs to have clear goals with targeted outcomes and it needs to be relevant to the challenges teachers face in the classroom. "In order to provide teachers adequate professional development, local education agencies not only need to ensure that they are providing strong levels of support, but they also need to measure outcomes of professional development programs" (Bellini et al., 2011, p. 58). Clark and Estes (2008) stated that for teachers to remain effective, school districts must identify and address the ever-changing challenges faced by teachers through effective, targeted professional development. Characteristics of effective professional development include allowing teachers time to focus on the training through the use of pupil-free days, providing opportunity for supervised practice by using instructional coaches, and scheduling time for teachers to collaborate on new learning (Wei et al., 2009). Teachers who will be collecting progress monitoring information should be well trained. The initial training for introduced new models or approaches should be intensive, and there is a highly probability of errors in implementation that must be happened through feedback (Shinn, 2002). The training should friendly with accept for all questions and concerns, also clear and immediate feedback is recommended. Thus. There is a need for training teachers on the best practice of writing accurate IEPs and goals and accurately using the baseline and developing goals from there.

## Summary

Research that discusses closing the achievement gap addresses performance gaps between students from different socio-economic levels, as well as between minority and white students. The literature search revealed only two studies that have identified the general and special education achievement gap. Both of these studies found that there is a discrepancy between students with and without disabilities, and that despite receiving individualized instruction and specialized learning supports, only 7% of students with disabilities narrowed the achievement gap sufficiently to benefit from instruction in the general education classroom. While these surveys provide a clear picture of the academic achievement of students with disabilities, they do not discuss specific approaches, methods, or strategies that special educators can use to narrow the achievement gap. Further, currently, the literature search revealed no research that addresses closing the achievement gap specifically between students with learning disabilities and those without. At this time, there are no evidence-based strategies known to narrow or close the achievement gap among students with learning disabilities. However, writing goals with high expectations and systematic progress monitoring could be one of the strategies that should help teachers to improve students' achievement. Thus, there is a need for future research in goal planning and need for investigating further as a means to closing this achievement gap.

## **CHAPTER III**

### **METHODOLOGY**

#### **Introduction**

The intent of this study was to gain an in-depth understanding of the processes that special education teachers use to determine reading goals for students with learning disabilities in elementary school and how this goal setting may explain students' performance in relation to the achievement gap. A sequential explanatory mixed-method research design was used to examine the extent to which Individualized Education Program (IEP) reading goals written by special education teachers were designed to address grade level skills that were consistent with the guidelines from the progress monitoring program, AIMSweb, used by the participating school district, and the experience of special education teachers in using data-based decision making when developing goals and measuring students expected rate of progress. The focus of this study was to identify factors that influence goal setting for students with learning disabilities rather than provide recommendations for specific reading interventions. Defining the factors that affect goal setting may assist special education teachers in providing the supports necessary for students with learning disabilities (LD) to greater academic achievement. Ultimately, addressing these factors may help students with LD to narrow the academic achievement gap.

### **Review of Research Questions**

The following research questions will be addressed in this study:

- Q1 What proportion of IEP reading goals written by special education teachers for students with learning disabilities in 2nd, 3rd, 4th, and 5th grade are designed to address grade level skills consistent with the AIMSweb guidelines?
- Q2 Is there a significant mean difference between the current reading goal scores of the students delineated in RQ1 and the AIMSweb National Norms Table scores at the 40th percentile?
- Q3 For the students delineated in RQ1, does the gap between student performance in reading and the AIMSweb grade level criteria decrease sufficiently so that a goal of grade level performance is either achieved or can be reasonably projected?
- Q4 For the students delineated in RQ1, what were the processes that special education teachers used to determine student reading needs and related goals, and how did they explain their decisions?
  - a. For the students delineated in RQ1, how did teachers use existing baseline data when setting reading goals?
  - b. For the students delineated in RQ1, how did teachers use grade-level Aimsweb expectations when setting reading goals?
  - c. For the students delineated in RQ1, how do teachers define what is adequate or inadequate progress?
- Q5 What training do teachers receive regarding using AIMSweb data to establish reading goals? How does this training explain their future goal setting activities?

### **The Explanatory Sequential Mixed Methods Research Design**

The research design used in this study was an explanatory sequential mixed-method design. Data were collected and analyzed in two distinct and successive phases and integrated during the interpretation phase of the study (Creswell & Plano Clark, 2011). According to Creswell and Plano Clark (2011), "the explanatory design is well

suited when the researcher needs qualitative data to explain quantitative significant (or non-significant) results, positive-performing exemplars, outlier results, or surprising results" (p. 82). The analysis of data was quantitative statistical procedures and exploration of themes from the qualitative data; this was followed by a synthesis of the quantitative and qualitative findings to uncover the implications suggested by the combined data sources (Creswell & Plano Clark, 2010).

The purpose of an explanatory sequential mixed-methods study was to use qualitative data to explain quantitative findings. In this design, the level of interaction between the two phases of the study was interactive rather than independent. Although the data for each phase were collected and analyzed separately and consecutively, questions for the interview data collected during the second qualitative phase of the study depended on the findings from the first quantitative phase. In this study, each of the research methods used had equal priority and was equally important when it came to addressing the research questions. This equal priority was referred to as QUAN→QUAL.

In the explanatory sequential mixed-methods research design, the phases were connected when the quantitative results were used to develop the qualitative data collection. The final questions used during the interview in the second phase were partly based on findings from the analysis of the quantitative secondary data set. Thus, the first phase informed the second phase of this study. The second connecting strategy that was used occurred during the interpretation stage of this study. Once the quantitative and qualitative results had been summarized and interpreted, sequentially and independently, the extent to which the qualitative findings helped to explain the quantitative results were discussed.

One advantage to using this research design was that, while conducting what amounts to two studies was time-consuming, since each phase was sequential, a single researcher could conduct the study. A second advantage was that, by using two research approaches, both quantitative and qualitative, greater insight could be gained than by using only a single approach. Thus, the reason for selecting this approach was that the dual research approach provided the most groundbreaking and in-depth understanding of this important research problem. The qualitative data and its analyses have had the potential to refine and explain the quantitative results by exploring participants' experiences in more depth.

### **Theoretical Perspectives**

Because this study consisted of two distinct research phases, the first of which was quantitative and the second qualitative, two theoretical perspectives were employed to guide each research phase (post-positivist in the quantitative investigation of phase one, and constructivist in the qualitative investigation in phase two). In mixed-methods research, researchers could use multiple paradigms or worldviews when conducting studies (Plano Clark & Creswell, 2008). Different paradigms consisted of philosophical assumptions regarding reality, knowledge, and methodology that were logically independent; because both quantitative and qualitative methods were used, either simultaneously or sequentially, paradigms in mixed-methods could be mixed and matched in varied combinations. The most important aspects that guide practical inquiry decisions were the demands of the inquiry context; it was the researcher's job to determine which research questions were most meaningful and which procedures the most appropriate to answer those questions.

Researchers who have used a mixed-method approach often have identified pragmatism as the most suitable paradigm (Creswell & Plano Clark, 2011). Rather than identify a single research approach, mixed-method researchers instead highlight the research question, using any approach or research design which are likely to provide insights and understanding to the research questions. Pragmatism is a paradigm that is focused on “whatever works” rather than a strict adherence to any single or particular philosophy of research. “With pragmatism researchers can employ different approaches, thereby valuing both “objective” and “subjective” knowledge” (Creswell & Plano Clark, 2011, p. 23).

In quantitative research, the most commonly used theoretical perspective has been the post-positivist worldview. Whereas positivism asserted that truth was absolute and objective, this perspective has challenged this assumption, asserting that researchers could never be entirely positive when claiming to know or understand human behavior (Creswell, 2009). The post-positivist worldview has been reductionistic; using a scientific approach; concepts were reduced into units which could be tested using mathematical and statistical formulae. By testing variables and proving hypotheses, post-positivistic knowledge has been based on measurement and observation. However, since researchers could not find absolute truth, post-positivist researchers have engaged in an ongoing process of refining knowledge through objectively testing claims and using data to support these claims. Objectivity has been considered an essential feature of the post-positivistic investigation, and the goal of research has been to develop statements that were as true according to the data (Creswell, 2009). In the current study, quantitative data were analyzed using statistical procedures to uncover frequencies and patterns in these



data while findings from the qualitative data help to explain these findings. Thus, the quantitative data provide an objective foundation for the following discussion.

Qualitative research, on the other hand, has often been associated with a constructivist worldview. According to Crotty (1998), “constructivism describes the individual human subject engaging with objects in the world and making sense of them” (p. 79). It has been through interaction with their environment that individuals have understood their world. In stark contrast to post-positivism, where objectivity has been essential to the inquiry, constructivism has relied on subjectivity to make meaning and gain insight. It has only been through subjective experience that individuals could construct their social realities. Through a constructivist lens, no universal truth has existed; since reality was subjective, multiple perspectives of truth must necessarily co-exist. The perspectives of both researcher and participants mingle to subjectively interpret the reality being studied and together these perspectives have created meaning. Thus constructivism has been intrinsically linked to interpretivism: the acknowledgement that developing understanding required the integration of multiple perspectives (Merriam, 2009). While the quantitative data provide the objective basis for the qualitative interviews, the personal experiences and unique perspectives of the participants in this exploratory phase of the study are used to explain the reasoning behind the decision making that occurs. This subjective interpretation of the facts provided by the quantitative data helped the researcher to gain insights into the decision making processes used by these special education teachers.

## Methods

The following sections describe the methods used in the two phases of the study.

### Phase 1: Quantitative Investigation

**Setting.** This study was conducted in a mid-size school district in a Western state in the United States. This school district served approximately 4,380 students, of whom approximately 2,300 attended one of the five elementary schools in this district. Its permanent resident population was primarily composed of Caucasian; the largest minority was comprised of Hispanics with a seasonal population of migrant workers who served the surrounding ranch and farm country. The estimated mean of annual household income in 2012 was \$80,563. The school district for this community served approximately 4,300 students, of which 2,300 were of elementary age. The students were served in five elementary schools.

**Sampling procedure.** In this quantitative phase of the study, a purposive, non-probability sampling procedure was used to recruit participants. In non-probability sampling, participants were not randomly selected; instead they were purposefully selected based on specific characteristics or criteria. The aim of purposive sampling was to examine the specific characteristics of the group of interest with a view to answering research questions rather than generalizing to a wider population, which would necessitate a larger random sample (Creswell, 2009). “In purposeful sampling the goal is to select cases that are likely to be ‘information-rich’ with respect to the purpose of the study” (Gall, Gall, & Borg, 2007, p. 178). Thus, a purposive sampling technique could be highly effective when used for small sample-size groups, such as students who met

## Methods

The following sections describe the methods used in the two phases of the study.

### Phase 1: Quantitative Investigation

**Setting.** This study was conducted in a mid-size school district in a Western state in the United States. This school district served approximately 4,380 students, of whom approximately 2,300 attended one of the five elementary schools in this district. Its permanent resident population was primarily composed of Caucasian; the largest minority was comprised of Hispanics with a seasonal population of migrant workers who served the surrounding ranch and farm country. The estimated mean of annual household income in 2012 was \$80,563. The school district for this community served approximately 4,300 students, of which 2,300 were of elementary age. The students were served in five elementary schools.

**Sampling procedure.** In this quantitative phase of the study, a purposive, non-probability sampling procedure was used to recruit participants. In non-probability sampling, participants were not randomly selected; instead they were purposefully selected based on specific characteristics or criteria. The aim of purposive sampling was to examine the specific characteristics of the group of interest with a view to answering research questions rather than generalizing to a wider population, which would necessitate a larger random sample (Creswell, 2009). “In purposeful sampling the goal is to select cases that are likely to be ‘information-rich’ with respect to the purpose of the study” (Gall, Gall, & Borg, 2007, p. 178). Thus, a purposive sampling technique could be highly effective when used for small sample-size groups, such as students who met

particular criteria within a small school district (Merriam, 2009; Plano Clark & Creswell, 2008).

**Participants.** Participants in this study consisted of 28 elementary students with LD who were currently receiving specialized instruction in reading and who were registered under the AIMSweb progress monitoring program. The criteria for inclusion in this study were that the students (a) attended 2nd, 3rd, 4th, or 5th grade during the year of the study, (b) had been identified as having LD, (c) had an IEP with goals in the content area of reading. The grade range between second and fifth grade was considered to be the best range to predict whether or not an academic achievement gap has been addressed and narrowed through specialized instruction and interventions (L. Jackson, personal communication, March, 2015). Demographic information regarding the students included student gender, grade level, and primary and secondary disabilities (see Table 1). All other student identifiers were removed by the Teacher on Special Assignment (TOSA) in the school district.

Table 1

*Students' Demographics*

Variable	# of Students	Percent
Gender		
Male	19	67.9
Female	9	32.1
Grade Level		
2nd grade	2	7.1
3rd grade	10	35.7
4th grade	11	39.3
5th grade	5	17.9
Primary Disability		
LD	28	100.0
Secondary Disability		
SLI	7	25.0
None	21	75.0

$N = 28$

\*SLI: Speech or Language Impairment.

In order to maintain the confidentiality of the students, while still describing specific data from individual students, the researcher provided each student with an identifying number (see Table 2). A description of the quantitative data along with an analysis of these data are provided for Research Questions 1 and 2.

Table 2

*Individual Education Program (IEP) Goals Review*

Variable	# of Goals
Semester	
Fall	21
Spring	23
Goal Type	
Fluency	25
MAZE	19
Grade Level	
2nd	2
3rd	14
4th	14
5th	5
Goal Level	
Below Grade Level	11
At Grade Level	11
Above Grade Level	13
Excluded Goals	
Missing	2
Unmeasurable	7

*Note.* There are a total of 44 goals.

**Measures.** Two measures were used in this study to address quantitative Research Questions 1, 2 and 3: guidelines from the AIMSweb progress monitoring system and data from individual student IEPs. Each of these measures is described below.

*AIMSweb progress monitoring system.* The AIMSweb progress monitoring guide was a central measurement of this study. The primary purpose of AIMSweb is to provide a systematic approach to progress monitoring of student achievement. AIMSweb also provides information on national norms of student performance which can be used to determine goal levels and student rate of expected improvement. Additionally, AIMSweb is an ongoing data information system in which student performance may be used to evaluate the effectiveness of interventions used in the classroom. In this progress monitoring system, students' rate of improvement is compared to the expected growth based on the grade level to examine whether each individual student is below, above, or at the specific grade level expected achievement. Based on this information, teachers could plan goals and intervention, especially for students who were at risk.

AIMSweb progress monitoring guide indicates the rank of a student when his performance was compared to that of his peers. In this study, the gap between the student's performance at his percentile rank was compared to the specific goal requirements established by AIMSweb for the 40th percentile, as expressed by the number of correct responses (MAZE) and number of words read correctly (fluency).

AIMSweb has established percentile norms according to grade level based on a national sample. When teachers used a norm-referenced approach to develop learning goals, they often set goals near the middle of the average range of scores between the 40th and 50th percentiles. According to AIMSweb, the 40th percentile is considered to be the average performance level which students needed to be able to access grade level instruction without specialized interventions. If a student was ranked below average, chances were high that this student needed specialized instruction and interventions.

Therefore, in this study, the 40th percentile of grade level reading skills according to the AIMSweb guidelines was selected to provide a baseline against which to measure the efficacy of student learning goals.

It was implicitly understood that the aim of instruction was for all students to become proficient in grade-level reading knowledge and skills. However, for students who did not make the expected growth, precise goals and objectives coupled with specialized instruction may have been necessary. Thus, in this study, student IEP goals in the areas of reading fluency and comprehension were examined and compared to the 40th percentile guidelines of each student's grade level to determine whether goals were designed to address the gap between the student's performance and that of his peers.

Once precise and accurate goals had been developed based on assessment and progress monitoring of previous student performance, the rate of improvement (ROI) needed to be calculated. A student's ROI was the average increase in raw scores per unit of time (measured per week, month, or instructional period) and was compared to the national norm sample. This calculation indicated whether student growth rate was average, below, or above average. By comparing student ROI to national growth norms, it was possible to see whether the ROI improved the student's percentile rank, thus narrowing the performance gap, or not. In this study, IEP goals were examined to determine the ROI of each goal and whether these goals narrowed or closed the achievement gap. (For more information about AIMSweb Progress Monitoring Guide visit [http://www.bemidji.k12.mn.us/wp-content/uploads/2013/11/Aimsweb\\_Progress\\_Monitor\\_Guide1.pdf](http://www.bemidji.k12.mn.us/wp-content/uploads/2013/11/Aimsweb_Progress_Monitor_Guide1.pdf)).



***Individualized education program.*** As described in Chapter II, an individualized education program (IEP) is developed for students who receive instruction and services in special education. The written IEP details the individual goals, objectives, services, and supports that students with disabilities require in order to receive a free and appropriate public education. In this study, participating student' IEPs were examined for the following information: student demographic data such as current grade level, gender, student's primary and secondary disabilities, goals related to reading and baseline scores in the content area of reading (see Appendix A for an example of IEP document used in this school district). The date of the IEP meeting was important, as this was used to determine what score level to compare with in the AIMSweb guidelines, which varied according to semester of assessment, and were used when calculating the student's ROI. For example, an IEP held during the fall was compared to AIMSweb fall semester guidelines, while IEP goals that started in the spring were compared to AIMSweb spring semester guidelines.

This information was entered into an IEP coding rubric; in addition to student demographic data and student performance data, specific information about each goal was entered (see Appendix B for IEP coding rubric). This included data regarding the date of the IEP and the current term, as well as the students' percentile ranking in the content area of reading. Additional information entered into the IEP coding rubric was checkmarks to indicate whether or not the current goals and student ROI met the 40th percentile AIMSweb guidelines, whether the goals were written as SMART goals, whether the goals included all necessary information and were complete, whether goals used scores or percentages to measure student progress, and whether the student was on

track to narrow the gap. Specific inclusion criteria were used to select goals used in the analysis. These included:

- Goals were included in IEPs between fall 2014 and spring 2015.
- Goals covered two full semesters.
- Goals were measurable.
- Goals were written according to AIMSweb system, excluding all goals written using percentages to estimate progress.
- Goals were complete without missing data.
- Goals had at least 29 weeks of interventions.
- Goals had at least 10 data points.

The information collected in the IEP coding rubric was used to create variables which could be used to answer Research Questions 1, 2, and 3. Variables included student demographic data, current student IEP goals, student ROI, AIMSweb guidelines related to goals.

**Procedures.** Once the researcher received the university's Institutional Review Board approval (see Appendix F), the researcher contacted the school district to arrange training in the use of the AIMSweb progress monitoring system. A one week training session on the use of the AIMSweb was held by the Special Education Administrator in the school district. During this training session, the researcher was introduced to AIMSweb and how teachers in the school district used it to conduct progress monitoring and goal setting. This was followed by an introduction into using the national norm information to establish learning targets and calculate student rate of expected improvement. Finally, the researcher learned how to analyze existing goals according to

the AIMSweb guidelines, as well as determine whether the AIMSweb guidelines were followed when the goals examined in this study were written.

After the AIMSweb training was completed, contact was made with the Teacher on Special Assignment (TOSA) utilized in the study. Once this contact had been established and there was an agreement between the TOSA and the researcher about the parameters of the study, access to student IEP goals related to the content area of reading as well as progress reports for all students who met the criteria of this study was submitted. Table 3 described the steps under taken to complete this study and the dissertation.

Table 3

*Summary of Procedures*

Steps	Actions
1.	Apply for and receive acceptance from IRB at UNC
2.	Contact District administrator
3.	Receive student data from the district
4.	Contact teachers/ receive consent/ set a time for the interviews
5.	Data Collection: Review IEP documents for each student
6.	Data collection: AIMSweb data for each student
7.	Data collection: Teacher interviews
8.	Data analysis & interpretation: quantitative AIMSweb & IEP data
9.	Data analysis & interpretation: qualitative teacher data
10.	Write Chapters 4 & 5 of the dissertation

The researcher contacted the TOSA in the school district where the study took place and requested access to student records, including IEPs and progress monitoring reports, via email. The researcher went in person to meet with the TOSA and signed the district confidentiality form pledging to maintain the confidentiality of each student participant. Identifying information, such as the students' school ID number, their full name, address, or any identifying information other than their grade level and gender was provided; therefore, the researcher was confident that complete confidentiality of these participants could be maintained. Once the signed district confidentiality form was obtained, the office of the special education director provided the researcher with the student records.

When the student records became available, each student's IEP was assigned a unique code. From the IEP, each student's demographic data including, gender, grade level, and IEP date was recorded. Then, the students' baseline scores in reading and comprehension for the year of 2014 to 2015, which were found in the IEP (in Section 6: Present Levels of Performance or Section 9: Annual Goals) were recorded in the spreadsheet. In addition to this baseline score, students' expected scores in reading and comprehension by the end of the IEP year were recorded. This information was available in the IEP under the "Measurable Goal" item in the Annual Goals Progress Report. All the above-mentioned data were first recorded in Excel program. Using Excel allowed the researcher to clean the data and provide a backup copy of the clean data prior to processing and analyzing the data in SPSS.

After the students' IEP and performance data had been compiled, examination of the AIMSweb National Norms Tables for the grade level reading guidelines was

conducted (see Appendix C). For reading, the table was called “Reading-Curriculum Based Measurement,” and for comprehension, it was called “Maze-Comprehension” referred to fluency and MAZE respectively in this dissertation study. In these tables, aggregate information about students’ grade level performance, percentile, Words Read Correct (WRC), and Average Rate of Improvement (ROI) were available by semester. This information was provided for each of the three semesters of the school year.

By using the AIMSweb grade level guidelines, the researcher was able to record the WRC score at the 40th percentile according to each student’s baseline score and the semester in which the IEP goals were developed. Once the baseline score, teacher’s aim score, and the WRC score at the 40th percentile were recorded into the Excel file, the researcher was able to begin making comparisons among these scores. The next section discusses data analysis used to examine differences.

**Data analysis.** All data analyses were conducted using SPSS (Statistical Package for the Social Sciences Program (Version 24). Once data entry was complete, the Excel file was examined to determine if any data were incomplete or incorrect, and any gaps noticed were fixed by the researcher and with the help from the TOSA. When the Excel file was clean and ready to be exported, the data were uploaded into SPSS. The variables that was used to address RQ1 were: (a) student demographic data, including their gender, grade level, and baseline scores in the content area of reading (independent) and (b) the proportion of IEP reading goals that met 40% of the AIMSweb grade level guideline score (dependent). The variables that were used to address RQ2 were: (a) the final IEP goal scores related to the content area of reading (independent) and (b) the rate of

progress for each student. In AIMSweb, a student's rate of improvement (ROI) was the average increase in his or her raw score per week.

To answer Research Question 1, frequencies were calculated to determine IEP reading goals according to AIMSweb percentile and goal level. To answer Research Question 2, a paired-samples t-test was used to calculate the difference within each before-and-after pair of measurements, determine the mean of these changes, and report whether this mean of the differences is statistically significant. The paired variables were: (a) The mean of the current IEP goal scores compared with AIMSweb scores and (b) The mean of the current IEP goal percentiles compared with AIMSweb 40th percentiles. To answer Research Question 3, the researcher calculated three rates of improvement (ROI):

1. Need ROI to determine the necessary improvement to close the achievement gap.
2. Current goal ROI to determine special education teachers' expectations from the students to close or narrow the achievement gap.
3. Student's actual ROI to determine if the student's meet the goal or close the achievement gap.

The needed rate of improvement (ROI) was calculated for each goal by determining the AIMSweb score at the 40th percentile of the student's grade level and subtracting each student's baseline score. This score was then divided by the number of instructional weeks to arrive at individual student ROI. The formula used was:

$$\text{Needed ROI} = \frac{40\text{th Percentile Score} - \text{Baseline Score}}{\text{Weeks Elapsed}}$$

The descriptive statistics consisted of determining the mean, median, percentage, frequencies, standard deviation, and/or variance values of this data set. The researcher presented descriptive statistics on student demographic data as well as the content area reading scores, including student baseline scores, final IEP goal score, and AIMSweb WRC score. This descriptive data were used to summarize and describe the data set in a meaningful way. For inferential statistics, the researcher conducted an independent sample *t*-test and a correlation analysis. For the independent sample *t*-test, the researcher used this analysis to determine the difference between final IEP goal score and the equivalent reading goal--WRC and reading fluency score--at the 40th percentile based on the AIMSweb. The *t*-test has been chosen since there were only two groups (i.e., final IEP goal score and AIMSweb score). The researcher used the  $\alpha$  - value = 0.05 as the cut-off level of significance.

Moreover, the researcher also performed a correlation analyses to examine the relationship between the baseline score and the final IEP goal score. If the correlation coefficient was positive, it could be concluded that as the baseline score increased, the final IEP goal score would also increase. If the correlation coefficient was negative, it could be said that as the baseline score increased, the final IEP goal score decreased, or vice versa. This correlation analyses was conducted using the Pearson Product Moment Correlation Coefficient. Again, the researcher used the  $\alpha$  - value = 0.05 as a cut-off value for the level of significance. The *p*-value as well as the value of *r* (i.e., correlation coefficient) were reported for this analysis.

## **Phase 2: Qualitative Investigation**

The purpose the second phase of the study was to explore the experience and perspectives of special education teachers who provided instruction in the content area of reading and developed goals for their students with LD. A qualitative case study methodology had been selected as the most appropriate research inquiry approach as this could be used to uncover the meanings that individuals and groups attach to certain situations and problems (Creswell, 2009; Creswell & Plano Clark, 2007). Four interviews were conducted to understand how special educators used data-driven decision making to develop IEP goals and make instructional decisions for their students. The in-depth discussions provide rich participant response and allow the researcher to explore the unique perspectives of special education teachers as well as clarify their responses (C. Marshall & Rossman, 2011). Researchers could clarify the why and the how behind participants' responses when conducting qualitative studies (M. Marshall, 1996).

**Research design.** In this phase of the study, focus was on the experiences of four special education elementary school teachers who provided students from phase 1 specialized instruction in the content area of reading and who developed IEP goals for their students who were identified with LD. The research design that had been selected for this phase was an exploratory case study. Case studies have been conducted in order to collect and analyze detailed information about a particular unit or system. "A case is typically regarded as a specific and bounded, in time and place, instance of a phenomenon selected for the study" (Schwandt, 2007, p. 27). The aim of the qualitative researcher was to discover significant aspects that were distinctive factors of the phenomenon by focusing in depth on a single case (Merriam, 2009).



In qualitative case studies, researchers focused on exploring and describing the phenomenon underlying the bounded case rather than determining causal effects or establishing widely generalizable knowledge. The emphasis was on exploring the experience of individuals rather than confirming facts, on processes rather than outcomes, and on the impact of the context in which the case was situated.

Basically, qualitative researchers are interested in *understanding the meanings people have constructed*, that is, how people make sense of their world and the experiences they have in the world. (Merriam, 2009, p. 13)

While case studies in general attempted to illuminate a topic, a process, or a set of decisions, the exploratory case study was most often used to explore situations where an intervention did not have a clear set of outcomes (Yin, 2003). There was a dearth of studies that addressed factors related to the achievement gap between students with LD and students without LD. Therefore, the researcher planned to explore this topic through the use of interviews in order to uncover the practice and perspectives of the study participants. By gaining an in-depth understanding of the case being studied, the researcher hoped to uncover the decision-making processes that were used by special educators, the context in which these decisions were made, and how these processes affected both students with LD and their teachers.

**Setting.** Phase 2 of this study was conducted in the same mid-size school district in a Western state. As described above in Phase 1 of the study, this district served approximately 4,400 students of whom approximately 60 were students with LD who had IEP goals in the content area of reading.

**Recruiting participants.** The participants were selected by the TOSA, and each had experience in teaching students with learning disabilities and writing IEP reading

goals. Once the researcher obtained approval from the Institutional Review Board (IRB) at the University of Northern Colorado, participants were contacted through email. The first email contained information about the purpose of the study and invited potential participants to take part. If there were potential participants who had not responded within a week of the first email, a reminder email was sent asking whether they would like to participate. Once participants had responded, the researcher sent a scheduling email so participants could select the time that was most convenient to their schedules. After the researcher had this information, a final email was sent giving the time, date, and location of the interviews. The four teacher participants were interviewed to share their experiences.

***Participants.*** Participants consisted of four special education teachers who currently provided students with LD specialized instruction in the content area of reading and who developed reading goals. The number of participants fell within the guidelines suggested by Mason (2010) and Creswell (2013). All of the participants were women and all were of Caucasian origin. The first participant, Ms. Aseel, had a Bachelor's degree in elementary education as well as a Master's degree on elementary special education with an emphasis on specific learning disability (SLD). She worked as a fifth grade general education teacher for 7 years and had been working as special education teacher for 28 years. Ms. Aseel had experience working with students from kindergarten through fifth grade and this was her 25th year working at this district. Ms. Aseel had extensive experience with writing IEPs, providing special education services for students with SLD, and administering assessments.

The second participant, Ms. Eman, held a Bachelor's degree in communication disorders and a Master's degree in special education with an emphasis in severe and/or multiple disabilities. She had 20 years of experience working as special education teacher and 15 years of experience working at this district. Ms. Eman also had considerable experience in writing IEPs, providing special education services for students with significant support needs as well as SLD, and conducting assessments.

The third participant, Ms. Deema, had a Bachelor's degree in Elementary Education and a Master's degree as a Special Education Generalist. She had 5 years' experience working as a general education teacher and had been working as special education teacher for 8 years, all within this school district. Ms. Deema had experience working with students from kindergarten to second grade and specialized in early identification and intervention. The last participant was Ms. Naz, an early career special education teacher with 3 years' experience working with students with SLD. She held a Bachelor's degree in Special Education and taught students from kindergarten to the eighth grade.

***Data collection methods.*** In this qualitative phase of the study, interviews were used to gather data from participants. According to Berg (2001), interviews are a technique used in qualitative research that include conducting thorough individual interviews with small number of respondents to capture the participants' unique perspectives on specific situation, idea, or program. Interviews are important and needed when examining thoughts, feeling, how people distinguish certain world events, and share their experience (Merriam, 1998). Interviews provide the researcher with an opportunity to understand and gather in-depth feedback based on the unique experience

of participants. Additionally, interviews encourage participants to share context-related experiences and insights, giving the researcher a view into the environment of the phenomenon being studied. It is likely for the respondent to seek explanations for questions that may appear difficult to understand during the interview (Speziale & Carpenter, 2007). According to Berg (2001), this helps to ensure the respondents offered relevant answers to questions, thus ensuring proper inquiry into the topic under study.

*Conducting Interviews.* Semi-structured in-depth interviews were used in this study; this type of interview includes a number of predetermined questions and particular topics. Interviews were conducted after the initial quantitative data analysis. Each participant was asked questions in a consistent order and was encouraged by the interviewer to expand on their responses. This permitted probing far beyond the answers to their prepared and standardized questions (Berg, 2001).

The interview questions were developed at the start of this study based on the research used in the literature review about the process of data-based decision making as well as AIMSweb guidelines. The questions were intentionally designed to be broad enough to elicit thorough responses by participants. After the initial development of the interview guide, peer review was used to verify content validity. Expert researchers at a university in a western state were asked to provide feedback about the interview questions. This feedback was used to develop the final version of the interview guide. It needs to be understood that these questions were just a guide, not an exclusive and restrictive list of questions to be given without deviation (Berg, 2001). Interviews were not conducted until after the quantitative data were analyzed, and examples from this data analysis were used to probe for more in-depth responses from participants. In those cases

that participant responses were brief, follow-up questions were used to collect additional information. A copy of the interview guide can be found in Appendix D.

Participants were informed in the recruitment email that interviews would last between 45 and 60 minutes, and that there might be a brief follow-up interview if this was deemed necessary for clarifying participant responses. At the beginning of each interview, each participant was reminded of this expected duration. The first interviews lasted between 40 and 60 minutes. The researcher took notes throughout the interviews while also digitally recording each interview. Once the interviews had been conducted, the researcher transcribed the audio recordings verbatim. A transcription of the interview was emailed to each participant with a request to provide additional information, changes, or feedback as needed. Two of the four participants responded to the researcher via email, although neither made changes or added additional comments.

**Data analysis.** The goal of the qualitative data analysis in this study was to get in-depth information of the studied subject (Merriam, 2009) a commonly used approach was to analyze verbatim transcripts of the interview (Merriam, 2009). The constant-comparative method of data analysis was a systematic analytical approach that involved identifying patterns and uncovering themes based on participants' statements. Identified patterns were then coded into categories, which in turn were compared across participants and analyzed for meaning (Merriam, 2009; Schwandt, 2007). In qualitative research, data analysis occurred through the action of organizing, reducing, and describing the data, clarifying themes that emerged from the data, demonstrating conclusions, and justifying those interpretations (Schwandt, 2007).

*Analyzing data into codes and themes.* Each transcript was thoroughly read, then themes and patterns were identified as the coding process began. The researcher coded the data from each interview separately to identify themes that were unique to each group. This was done by reading through the discussions and identifying key statements and words that were relevant to the case being studied. Key statements were identified by close reading of each line of the transcripts and extracting relevant comments. Once the key statements had been identified, the researcher grouped these into themes. The themes that emerged from the interviews discussion and best captured the perspectives of the participants were described in detail and organized into individual categories. Once each transcript had been coded, the researcher began to compare the data from each interview to determine common themes as well as individual themes.

### **Ensuring Overall Validity and Reliability for the Study**

**Validity.** For a mixed-methods research study to be considered trustworthy, researchers must conduct their study in a rigorous manner, paying careful attention to the established criteria that support trustworthiness. “validity and reliability are concerns that can be approached through careful attention to a study’s conceptualization and the way in which the data are collected, analyzed, and interpreted, and the way in which the findings are presented” (Merriam, 2009, p. 210).

Since a mixed-methods research study consisted of both a quantitative phase and a qualitative phase, it was important to address the validity checks and procedures that would be used in both phases. In the first, quantitative phase of this study, the data being collected and analyzed were secondary data derived from existing student IEPs. The instrument used to collect this secondary data was a researcher-constructed checklist used

to glean information about student achievement from IEPs and the AIMSweb protocols for grade level content area performance.

Validity was the degree to which the research instrument measures that which it was designed to measure so that the resulting statistical analysis was accurate (Gall et al., 2007). Although it was virtually impossible to guarantee that any instrument was 100% valid, in this study, content validity was used to determine the validity of the checklist. Each student IEP was examined for specific information which was entered into the checklist. The same information was entered for each case examined. Additionally, the suggested grade level performance averages were taken from the AIMSweb protocol for each student. Once all the secondary data had been entered into the instrument, a peer check was conducted to ascertain that the secondary data were accurate. After the statistical analyses had been conducted, the findings were also reviewed using peer check to ensure that quantitative analysis of the secondary data were correct. A statistician was consulted to ensure that the statistical analysis had been conducted correctly and that the findings were accurate. Given the relatively small sample of secondary data ( $n =$  approximately 28), the results from the study may not be generalizable from this sample to a wider population (Gall et al., 2007). However, the external validity of this study may be increased by both the content validity of the instrument, the peer check of the analysis process, and the supporting qualitative data in the second phase.

In qualitative research, validity was most often addressed through the use of triangulation, rich description of findings including the presentation of both common and discrepant themes from the data, the use of member checks, and the use of both internal and external auditors (Creswell, 2009; Merriam, 2009). In this phase of the study,

concerns about validity were addressed by focusing on multiple sources of data as well as multiple approaches to ensure that the data were an accurate reflection of the participants' lived experience and perspectives.

**Reliability.** The reliability of a study could be defined as whether or not the study could be repeated or replicated. In the quantitative phase of this study, reliability was concerned with whether the performance scores demonstrated by the students in the study were stable and consistent over time (Creswell & Plano Clark, 2011). If the study were to be repeated, it should provide similar results given similar participants, achievement scores, and using the same measurement procedures.

However, all measurement procedures contained a certain amount of error; it was the amount of error that would determine the degree of reliability of a measurement. Reliability increases when the degree of error is low. In this phase of the study, multiple measures were used to increase the consistency of the measurement procedure, thus reducing the amount of error. Additionally, the use of peer check of the statistical findings helped to identify obvious errors in measurement, thereby increasing the reliability. Since this was a mixed-method study, the focus was to conduct a study that was reliable, where both the procedures and the data contained in this study were clearly aligned and well described, so the study might be replicated in the future.

For the qualitative phase of the study, reliability was somewhat more problematic, because human behavior was neither static nor uniform. Therefore, repeating a qualitative study may not yield the exact same results and interpretations of the results may vary from one researcher to the next. "The more important question for qualitative research is *whether the results are consistent with the data collected*" (Merriam, 2009, p. 221). In



this phase of the study, concerns about reliability were addressed by using triangulation, eliciting feedback from internal and external auditors, and establishing an audit trail.

Triangulation and feedback from auditors is described below.

**Triangulation.** Triangulation could be defined as the combination of multiple sources that together validated the data of a research study. The convergence of multiple viewpoints increased the cross validation of findings within the study (Merriam, 2009; Plano Clark & Creswell, 2008). Triangulation in mixed-method research accrued with the combination used of qualitative and quantitative methods; triangulation could strengthen and support the weakness of each method (Plano Clark & Creswell, 2008). In mixed-method research, there were two different kinds of triangulation. The first triangulation was the “within-method” kind which used multiple techniques within the method to collect and interpret the data. In other words, within-method triangulation involved cross-checking for internal consistency or reliability. The other kind of triangulation was “between-method” which tested the degree of external validity (Plano Clark & Creswell, 2008). In this study, the within-methods used to increase the validity were rich description, member check of the transcripts, and the use of internal and external auditors to examine the findings. The primary between-methods used were comparing the themes and patterns between the two interviews, as well as describing both common and discrepant findings within and between interviews.

**Rich description.** A well-conducted qualitative study yielded rich description about the phenomenon being studied. Providing detailed information about the themes uncovered, the context of the study, and the participants would provide the reader with a sense of reality and support the veracity of the findings. By including descriptions of the

themes that were common to most participants as well as discrepant themes, the validity and credibility of the study were increased. Included in the rich description were quotes and excerpts from participant statements, feedback from participants, and field notes from the interview discussions.

**Member check.** In order to verify the accuracy of the findings, the researcher asked the participants to provide feedback on the initial themes and summaries of key statements in the preliminary analysis. This method reduced the possibility of misinterpreting participant statements and misunderstanding their perspectives; it could also be used to help identify and illuminate researcher bias (Merriam, 2009). Soliciting participant feedback was often recommended as a strategy in qualitative research for enhancing the trustworthiness of the results (Leech & Onwuegbuzie, 2007; Merriam, 1998).

**Internal and external auditors.** Additionally, in order to enhance the credibility of this study and of the overall results, the researcher used both an internal and external auditor to provide feedback. The internal auditor was a member of the dissertation committee and was aware of the complexities and challenges involved throughout the entire research study; this auditor was able to provide specific feedback regarding the overall analysis process and how well the initial categories and themes fit within the data. Two external auditors were asked to provide feedback on the qualitative data. Each of these auditors provided objective and balanced insights into the qualitative findings. The auditors provided specific feedback regarding how well the qualitative data aligned with the themes and categories and regarding the overall conceptual and logical fit. The external auditors were less likely to be biased in the assessment of the data, as they were

not a part of the dissertation committee. Both auditors were very familiar with qualitative methodologies and research manuscripts and agreed to provide feedback on the results of the study. The researcher provided them with copies of the transcripts, the summaries that were provided to the participants, and of the exhaustive description of the results. Their feedback was incorporated in order to further enhance the findings of the study.

**Researcher bias.** By clarifying their theoretical orientation and assumptions, the chance of researcher bias could be reduced. According to Merriam (2009), “Investigators need to explain their biases, dispositions, and assumptions regarding the research to be undertaken” (p. 219). The credibility of a study, therefore, relied in part on the researcher’s ability to engage in a practice of reflexivity or critical reflection of one’s own position as a researcher. Creswell (2009) stated that “good qualitative research contains comments by the researchers about how their interpretation of the findings is shaped by their back-ground, such as their gender, culture, history, and socioeconomic origin” (p. 192).

In this study, the intention was to investigate factors that influenced the achievement gap between students with LD and those without this identification. Since the researcher came from a background as a special education teacher, working with students with LD, she acknowledged that she may have had some assumptions regarding the efficacy of training provided to special educators, in particular in the area of developing effective instructional goals. In order to minimize any issues that may arise due to researcher’s biases, the use of member check, internal and external auditors, and presentation of contradictory findings were used to increase the validity of this study.

**Audit trail.** An audit trail was established in order to display how data were collected and analyzed. By creating and maintaining a history of each step in this phase of the study, including a trail of the decisions made during data collection through field notes and interview discussion transcripts, during data analysis through identifying themes and establishing categories, and during the interpretation phase, the researcher hoped that the audit trail would increase the authenticity of the study, and thereby the reliability. Artifacts included transcriptions of the interview discussions, transcribed field notes, and communications to and from participants and auditors, including emails and questionnaires.

### **Ethical Considerations**

Prior to beginning the study, application to the Institutional Review Board (IRB) at the University of Northern Colorado for permission to conduct the study was submitted. In order to maintain high ethical standards during the course of the study, an Informed Consent Form was developed that all participants read before signing, protecting the confidentiality of all participants and the school district in which they work, storing the data safely, and develop specific guidelines for participation in both phases of the study. By addressing these ethical standards explicitly, the researcher made certain that scientific rigor was upheld throughout each phase of the study.

**Informed consent form.** In order to provide participants with clear information about the purpose of the study, the informed consent process was used to explain the study and to obtain their written consent as participants (see Appendix E). This process let the researcher and all participants share information about the purpose of the study

and the potential risks as well as the benefits of participating in the study. It also guaranteed that the participants' rights were addressed in writing (Creswell, 2013).

**Confidentiality measures.** Because the participants were colleagues, and thus knew each other, and because some of the communication between the special education director, the participants, and the researcher was conducted through email, complete anonymity could not be ensured. However, measures were taken to protect the confidentiality of the participants and the school district in which they worked. The school district in which the study took place would not be mentioned by name but described as a "mid-size school district in a Western state".

In order to secure the confidentiality of the participants, pseudonyms was assigned for each participant which were used at all stages of the study, from the transcripts of the interviews to the final written discussion. The assigned pseudonyms were the only identifiers used in the transcriptions, in the uploaded data files, and in the final document. The primary researcher, the special education director in the school district, and the participants themselves were the only people who knew the participants actual names, and no other person would have access to this information.

**Storing the data.** All data, which included audio recordings, transcriptions, and all documents produced during the analysis phase was stored in password-protected files on the researcher's computer. A password-protected Dropbox account was established to share information between the researcher and research assistant, as well as the researcher's academic advisor and committee members. All paper-based data, including Informed Consent Forms, participant questionnaires, student IEPs, checklists, study

protocols, all field notes and the researcher's personal research journal, as well as any flash drives used, were kept in a locked file cabinet in the researcher's office.

**Respect for participants.** During the course of the study, there were several communications and interactions between the researcher and the participants. In an attempt to establish an open and collaborative exchange of opinions and viewpoints, the researcher put aside personal perceptions, assumptions, and biases, listening carefully to participants as they stated their experiences and perspectives. By approaching all participants with respect and gratitude for their willingness to share their personal experiences, the researcher hoped to increase the quality and depth of the interviews discussions. Throughout each phase and each stage of this study, the researcher upheld a stance of consideration and respect towards participants, by avoiding any judgments or criticism to participants' statements (Merriam, 2009; Miller, Birch, Mauthner, & Jessop, 2012).

## **CHAPTER IV**

### **RESULTS**

The intent of this sequential explanatory mixed-method study was to examine the level to which Individualized Education Program (IEP) reading goals written by special education teachers were consistent with the guidelines of the AIMSweb system, and the processes that special education teachers used to determine IEP reading goals for students with learning disabilities in elementary school. In the first quantitative phase of the study, the researcher examined whether student IEP goals were designed to address grade-level skills and whether these were consistent with the guidelines from AIMSweb. In the second qualitative phase, special education teachers were interviewed about their experiences in using data-based decision making when developing goals and measuring students expected rate of progress.

#### **Phase One: Quantitative Findings**

Prior to starting data collection, the researcher and the Teacher on Special Assignment (TOSA) at the setting of the study met to discuss the assessments used by the AIMSweb program as well as the methodology used to gather and interpret the data. During the training, time was spent analyzing actual student reading goals and comparing these to the AIMSweb National Norms Table. The assessments used in this study included R-CBM and MAZE. The R-CBM test used a meaningful general curriculum based passage to collect data on a student reading fluency, and the MAZE reading test examined both comprehension and students' general reading achievement skills. Once

the researcher completed the training and was familiar with the AIMSweb program, the TOSA in the school district provided the researcher with student data. A total of 28 IEPs from students in 2nd, 3rd, 4th, and 5th grades who attended five elementary schools in the school district were used in this study. Data from IEP reading goals were used to answer Research Questions 1, 2 and 3. A total number of 44 reading goals (25 reading fluency and 19 MAZE goals) in different semester terms (spring or fall) were provided. In order to maintain the confidentiality of the students, while still describing specific data from individual students, the researcher provided each student with an identifying number. A description of the quantitative data along with an analysis of these data are provided for Research Questions 1 and 2.

### **Research Question 1 Findings**

The first research question in this study was “What proportion of IEP reading goals written by special education teachers for students with learning disabilities in 2nd, 3rd, 4th, and 5th grade is designed to address grade level skills consistent with the AIMSweb guidelines?” A total of 44 IEP reading goals from the 28 students in 2nd, 3rd, 4th, and 5th grades were reviewed according to the following criteria:

- Goals were included in IEPs between fall 2014 and spring 2015.
- Goals were measurable, i.e., included specific information about baseline scores and goal target score.
- Goals were written according to the AIMSweb system, excluding all goals written using percentages to estimate progress
- Goals were complete without missing data.



Based on the criteria stated above, 9 goals were excluded from the 44 total goals. Seven of the excluded goals used the DIBELS system and measured progress using percentages instead of scores. Two of the excluded goals had missing data. This left the final number of 35 IEP goals that were analyzed for this research study (see Table 4).

To answer Research Question 1, a frequency analysis was conducted to determine the range of the percentile levels that teachers chose to write the IEP goals. The percentile levels range was determined according to AIMSweb guidelines. The goal levels were;

- From 1st to 10th percentiles (very low),
- From 11th to 25th percentiles (low),
- From 26th to 75th percentiles (average),
- From 76th to 90th percentiles (high),
- From 91st to 99th percentiles (very high).

In addition, to answer this question, the number of goals that were written at the mid-average percentile level (between 40th and 50th percentile) was provided.

The analysis of these 35 IEP goals (see Table 5), showed that a total of 11 goals were written below grade level which meant that all 11 goals did not meet AIMSweb guidelines. Eleven goals were written at the students' grade level. However, four of these goals were written at the low-percentile level, while seven grade-level goals were written in the average-percentile level. Additionally, 13 goals were written above the students' grade level, 1 goal was in the very low average, 8 goals were in the low average, and 4 goals were written in the average-range percentile level. Disregarding the goal grade level, 14 goals were written at the low-percentile level between (11th to 25th percentile) and 16 goals were written at the average-percentile level between (25th to 75th

percentile). Only 3 (8.5%) of the 35 goals were at the mid-average percentile level (between 40th and 50th percentile).

In this study, and according to AIMSweb guidelines, the goal between the 40th and 90th percentiles at the students' grade level or above were considered as goals that were designed to close the achievement gap. Thus, only 9 of the 35 goals included in this analysis met the AIMSweb guidelines of writing a goal at or above the 40th percentile at the students' grade level or above. The proportion of reading goals that met the AIMSweb guidelines was 25.71%. The results from the first research question clearly showed that 26 of the IEP goals in this study were designed to place the student in the low-percentile rank, however, patterns were observed in selecting grade level and determining the percentile level for these goals. When a teacher wrote goals below grade level, they tended to choose higher percentiles rank, while when writing goals above grade level, teachers targeted low percentiles rank. However, goals at students' grade level were written between low- and average-percentiles rank. Table 4 illustrates the wide variety of percentiles used by teachers; reading goals are written between the 8<sup>th</sup> and 94<sup>th</sup> percentiles. As evident in the table, there was no significant difference in the patterns for fluency or MAZE goals. The average of the percentiles in goals below grade level was 61. The average of the percentiles in goals at grade level was 41. Finally, the average of the percentiles in goals below grade level was 27.

### **Research Question 2 Findings**

The second research question in this study was “Is there a significant mean difference between the current reading goal scores of the students delineated in RQ1 and the AIMSweb National Norms Table scores at the 40th percentile?” The criteria for

including goals used for RQ1 were used to answer this question as well, resulting in an  $n$  of 35 goals. To answer this question, two pairs of variables were compared using a paired-samples  $t$ -test. The paired-samples  $t$ -test was used to calculate the difference within each before-and-after pair of measurements, determine the mean of these changes, and report whether this mean of the differences was statistically significant. The paired variables were: (a) the mean of the current IEP goal scores compared with AIMSweb scores and (b) the mean of the current IEP goal percentiles compared with AIMSweb 40th percentiles.

These pairs were selected to determine whether the score and percentile means identified in student IEPs were aligned with the guidelines recommended by AIMSweb that goals be written at the 40th percentile of the students' grade level. Twenty-four of the goals were written at or above grade level, and the goal scores and goal percentiles were used to compare with AIMSweb scores and percentiles. However, 11 of the IEP goals were written below grade level and comparing two different grade levels scores and percentiles would not accurately show the difference in the mean and the analysis would not accurately identify the difference between grade level and below grade level percentiles, thus skewing the findings. In order to include these below grade level goals in the paired samples  $t$ -test, baseline scores and percentiles were used since the goals themselves did not address grade level skills. The means and standard variations of the variables described above are shown in Table 6.

Table 4

*Individualized Education Plan Goals Data*

Student ID	Baseline Score	Baseline Grade Level	Student Grade Level	Goal Grade Level	Goal Score	AIMS Score	Baseline Percentile	Goal Percentile	AIMS Percentile
A3	50	5	5	3	98	110	3	61	40
B1	32	4	4	2	106	100	2	86	40
B1	1	4	4	2	14	12	1	94	40
B3	67	3	5	3	98	110	7	61	40
B3	9	4	5	4	20	16	20	85	40
B10	48	3	4	3	98	100	17	61	40
B10	9	3	4	3	16	12	72	20	40
C3	51	4	4	3	51	100	6	45	40
C7	21	3	5	4	26	24	72	65	40
C7	89	5	5	4	105	143	7	19	40
C9	53	3	4	3	127	100	21	82	40
A5	16	2	3	3	82	116	1	14	40
A7	2	3	3	3	8	14	1	11	40



Goals Below Grade Level



Goals At Grade Level



Goals Above Grade Level

Table 4 (continued)

Student ID	Baseline Score	Baseline Grade Level	Student Grade Level	Goal Grade Level	Goal Score	AIMS Score	Baseline Percentile	Goal Percentile	AIMS Percentile
A9	68	4	4	4	112	100	14	55	40
A9	7	4	4	4	15	12	14	60	40
B2	30	3	3	3	70	77	6	34	40
B4	39	3	3	3	80	116	2	13	40
B6	37	4	4	4	112	100	3	55	40
B8	22	3	3	3	98	77	4	61	40
C3	2	4	4	4	8	12	2	18	40
C5	3	3	2	2	82	53	1	70	40
C9	8	4	4	4	15	12	18	60	40
A1	44	3	3	4	104	128	3	19	40
A1	3	3	3	4	21	18	1	53	40
A7	59	3	3	4	85	116	6	8	40
A8	43	2	2	3	91	116	5	20	40
B7	44	4	4	5	123	128	1	25	40



Goals Below Grade Level



Goals At Grade Level



Goals Above Grade Level

Table 4 (continued)

Student ID	Baseline Score	Baseline Grade Level	Student Grade Level	Goal Grade Level	Goal Score	AIMS Score	Baseline Percentile	Goal Percentile	AIMS Percentile
C1	61	3	3	4	112	128	7	25	40
C1	9	3	3	4	15	18	15	25	40
C2	63	3	3	4	112	116	7	37	40
C4	55	4	4	5	117	143	2	22	40
C4	11	4	4	5	18	20	11	24	40
C6	89	2	3	4	95	128	33	14	40
C8	6	4	3	4	18	18	1	40	40
C8	39	4	3	4	128	128	1	40	40

All the AIMSweb goal scores in the fourth column are grade level goal scores and cannot be compared with below grade level goal score.



Goals Below Grade Level



Goals At Grade Level



Goals Above Grade Level

Table 5

*Individual Education Program (IEP) Reading Goals According to AIMSweb Percentile and Goal Level*

	Between 1 <sup>st</sup> to 10th Percentile (Very Low)	Between 11th to 25th Percentile (Low)	Between 26th & 75th Percentile (Average)	Between 76th & 90th Percentile (High)	Above 90th Percentile (Very High)	Between 40th & 90th Percentile Closes The Gap	Total
Above Grade Level	1	8	4	0	0	3 of 13	13
At Grade Level	0	4	7	0	0	6 of 11	11
Below Grade Level	0	2	5	3	1	excluded	11
Total	1	14	16	3	1	9 of 35	35
Missing **							2
Non-measurable **							7
Total							44

\* All “Below Grade Level” percentiles level were excluded from “Closes the Gap” percentiles.

\*\* Goals excluded from the analysis.

Table 6

*Pairs Samples Statistics: Current Individualized Education Program Goals Scores and Percentile vs. AIMSweb Goals Scores and Percentile*

		Mean	Standard Deviation	Std. Error Mean
Pair 1	Current IEP Goal Scores	61.22	41.91	7.08
	AIMSweb Scores	77.74	48.67	8.22
Pair 2	Current IEP Goal Percentile	25.91	19.65	3.32
	AIMSweb Percentile	40.00	.00	.00

$n = 35$

From the SPSS output (Table 7) shows the results of the paired samples  $t$ -test that  $t(-4.08)$  associated with the  $p$ -value = .00, which was less than the significance level 0.05, so there was a significant mean different between the IEP goal scores and AIMSweb scores. Thus,  $t$ -test.  $t(-4.23)$  associated with the  $p$ -value = .00, which was less than the significance level 0.05, so there was a significant mean difference between the IEP goal percentiles and AIMSweb 40th percentiles. The data provided sufficient evidence to reveal that the current IEP goals and percentiles were not consistent with the AIMSweb guidelines for writing goals at grade level.



Table 7

*Paired Differences: Current Individualized Education Program Goals Scores and Percentile vs. AIMSweb Goals Scores and Percentile*

		Paired Differences					<i>t</i>	<i>df</i>	Sig. (2-tailed)
		Mean	Standard Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Current IEP Goal Scores & AIMSweb Scores	-16.51	23.91	4.042	-24.73	-8.29	-4.08	34	.00
Pair 2	Current IEP Goal Percentiles & AIMSweb 40th Percentiles	-14.08	19.65	3.322	-20.83	-7.33	-4.23	34	.00

### Research Question 3 Findings

The third research question was “For the students delineated in RQ1, does the gap between student performance in reading and the AIMSweb grade level criteria decrease sufficiently so that a goal of grade level performance is either achieved or can be reasonably projected?” The criteria for including the goals used to answer RQ3 included:

- Goals were included in IEPs between fall 2014 and spring 2015.
- Goals that did not cover two full semesters were excluded.
- Goals were measurable.
- Goals were written according to AIMSweb system, excluding all goals written according to DIBELS system using percentages to estimate progress.
- Goals were complete without missing data.
- Goals had at least 29 weeks of interventions.
- Goals had at least 10 data points.

Out of 44 total goals, 2 goals had missing data, 7 goals were non-measurable, and 5 goals had fewer than 10 data points. These 14 goals were excluded from the analysis, leaving a *n* of 30 goals. Out of the 30 goals, 9 were below grade level, 8 were at grade level, and 13 were above grade level. To answer RQ3, the researcher calculated three rate of improvement (ROI):

1. Need ROI to determine the necessary improvement to close the achievement gap.
2. Current goal ROI to determine special education teachers’ expectations from the students to close or narrow the achievement gap.

3. Student's actual ROI to determine if the student's meet the goal or close the achievement gap.

The needed ROI was calculated for each goal by determining the AIMSweb score at the 40th percentile of the student's grade level and subtracting each student's baseline score. This score was then divided by the number of instructional weeks to arrive at individual student ROI. The formula used was

$$\text{Needed ROI} = 40\text{th Percentile Score} - \text{Baseline Score} / \text{Weeks Elapsed}$$

The student's current goal rate ROI was calculated for each goal by determining student current goal scores and subtracting each student's baseline score. This score was then divided by the number of instructional weeks to arrive at individual student ROI.

The formula used was:

$$\text{Student Current Goal ROI} = \text{Student Goal Score} - \text{Baseline Score} / \text{Weeks Elapsed}$$

Similarly, each student's actual ROI was determined by subtracting student baseline scores from their final achievement score and dividing by the number of instructional weeks. The formula used was:

$$\text{ROI} = \text{Final Score} - \text{Baseline Score} / \text{Weeks Elapse}$$

Table 8 shows students needed ROI, actual ROI, and goal ROI for all students. A frequency analysis (Table 9) showed that students completed only 7 of 30 goals with 100% accuracy, 5 below grade level, 1 at grade level, and 1 above grade level. Student achievement in two goals was sufficient to close the achievement gap, and both of these goals were written above the students' actual grade level, which is equal 6.57%.

Table 8

*Rate of Improvements (ROIs) in Different Goal*

Student Id	Goal Level Type	Needed ROI	Actual ROI	Goal ROI	Met Goal ROI?	Close Gap?
B1	Below Grade Level	2.66	2.00	2.05		
B10	Below Grade Level	2.19	1.27	2.16		
C9	Below Grade Level	2.58	1.58	2.55		
B1	Below Grade Level	0.50	0.41	0.38	Yes	
B10	Below Grade Level	0.38	0.36	0.33	Yes	
A3	Below Grade Level	2.58	1.33	1.33	Yes	
B3	Below Grade Level	2.11	1.08	0.86	Yes	
A3	Below Grade Level	0.47	0.33	0.11	Yes	
B3	Below Grade Level	0.41	0.22	0.3		
B4	Grade Level	2.44	1.19	2.75		
A2	Grade Level	1.63	0.33	1.19		
B6	Grade Level	2.86	1.27	2.86		

Table 8 (continued)

Student Id	Goal Level Type	Needed ROI	Actual ROI	Goal ROI	Met Goal ROI?	Close Gap?
C3	Grade Level	2.66	0.97	2.66		
B6	Grade Level	0.44	0.3	0.44		
C9	Grade Level	0.27	0.19	0.19	Yes	
B9	Grade Level	1.77	1.58	1.77		
B9	Grade Level	0.38	0.27	0.38		
A1	Above Grade Level	2.22	1.75	2.55		
C1	Above Grade Level	2.25	1.91	2.58		
C2	Above Grade Level	1.69	1.3	2.02		
C6	Above Grade Level	1.91	1.05	1.80		
C8	Above Grade Level	2.44	1.25	2.33		
A1	Above Grade Level	0.27	0.33	0.38		Yes
C1	Above Grade Level	0.38	0.36	0.50		
C2	Above Grade Level	0.22	0.44	0.33	Yes	Yes

Table 8 (continued)

Student Id	Goal Level Type	Needed ROI	Actual ROI	Goal ROI	Met Goal ROI?	Close Gap?
C8	Above Grade Level	0.30	0.19	0.33		
C4	Above Grade Level	2.13	0.61	2.00		
B7	Above Grade Level	0.19	0.13	0.36		
C4	Above Grade Level	0.19	0.02	0.25		
C7	Above Grade Level	0.36	0.30	0.41		

Table 9

*Goal Achievement*

Grade Level	Did Not Meet Goal	Met Goal	Closed Gap
Above Grade Level	12	1	2
Grade Level	7	1	0
Below Grade Level	6	3	0
Total Goals	25	5	2

Using a paired samples *t*-test, the mean of the needed ROI scores and the mean of the students' actual ROI were then compared to determine if there was a significant difference between the students' actual ROI and the needed ROI. Table 10 shows the results of the paired samples *t*-test of ROI means.

Table 10

*Paired Samples Statistic: Needed Rate of Improvements vs. Actual Rate of Improvements*

		Mean	Standard Deviation	Std. Error Mean
Pair 1	Needed ROI	1.3627	1.01143	.18466
	Actual ROI	.8107	.60377	.11023

The SPSS output (Table 11) shows the results of the paired samples *t*-test.  $t(5.256)$  associated with the  $p$ -value = .000, which was less than the significance level 0.05, so there was a significant mean difference between the needed ROI scores and students' actual ROI scores. The data provided sufficient evidence to show that the students' actual ROI scores were not consistent with the needed ROI scores and it could

be concluded that most of the students did not meet the needed ROI to close the achievement gap.

### **Phase Two: Qualitative Findings**

During the second qualitative phase of the study, four special educators were interviewed about the processes they used in determining appropriate IEP reading goals for students with learning disabilities in elementary school. Data collected during the interviews were used to answer Research Questions 4 and Research Questions 5.

Participants were asked a series of open-ended questions regarding their experiences in writing IEP goals, progress monitoring, data interpretation, and data-based decision making for the students who participated in the Phase 1 of the study. They were asked how they determined students' rate of expected and actual improvement and whether students made sufficient progress towards their reading goals. When asked for recommendations for participants, the special education director in the district provided the researcher with a list of special education teachers who had experience in writing IEP goals as well as in using the AIMSweb® system to monitor student progress in reading. The researcher specifically interviewed four special education teachers from different schools. Each interview lasted between 40 to 60 minutes in length and were digitally recorded and transcribed to aid in the data collection. Moreover, the researcher conducted a member-check in order to ensure the accuracy of the interview data.



Table 11

*Paired Samples Test*

		Paired Differences					<i>t</i>	<i>df</i>	Sig. (2-tailed)
		Mean	Standard Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Needed ROI & Actual ROI	.551	.575	.105	.337	.766	5.256	29	.000

In addressing the two research questions, the following five themes were identified through constant comparative analysis of the interview data: (a) writing IEP goal procedure, (b) grade level versus instructional level goals, (c) writing realistic goals, (d) factors to close achievement gap, and (f) training. In the following section, each of these themes are described.

#### **Research Question 4 Findings**

Research Question 4 asked “For the students delineated in RQ1, what were the processes that special education teachers used to determine student reading needs and related goals, and how did they explain their decisions?”

- a. For the students delineated in RQ1, how did teachers use existing baseline data when setting reading goals?
- b. For the students delineated in RQ1, how did teachers use grade-level Aimsweb expectations when setting reading goals?
- c. For the students delineated in RQ1, how do teachers define what is adequate or inadequate progress?

In answering this question, the researcher developed themes and sub-themes based upon data gathered from interviews. The three main themes were; (a) IEP goal writing procedure, (b) grade level versus instructional level goals, and (3) writing realistic goals. The first theme consisted of detailed sub-themes of the procedures used by special education teachers for writing IEP goals. The second theme was a discussion of how teachers viewed writing goals between meeting students’ needs and grade level skills or what was called “grade level versus instructional level” skills. The third theme emphasized how teachers viewed the rational of writing IEP goals and being realistic in their expectations.

**Theme 1: Procedures used for writing Individual Education Program goals.**

The four special education teachers agreed that the basic procedure for writing appropriate IEP goals for students was conducting an assessment of the students' reading abilities, establishing a baseline of the students' reading performance, writing a reading goal that extended the students' reading performance, and conducting progress monitoring. The researcher identified each of these procedures as subthemes. However, the researcher found that the participants had different levels of understanding the rationale and use of each of these processes.

*Assessment.* When students were referred to special education services for the first time, the evaluation procedure started with testing the students to determine their baseline reading levels. The participants shared that, when a student was initially referred to special education services and prior to any IEP, they started the evaluation with the *Woodcock Johnson Test of Cognitive Abilities III* (Woodcock & Mather, 2000) to evaluate the student's abilities across a wide range of cognitive skills, including reading and writing skills. Results from this test helped to determine student eligibility and provided baseline information for the initial IEP.

However, for students who already have an IEP, the special education teachers used current educational data, including progress reports on current reading goals and tools such as the AIMSweb testing assistant or the DIBELS (Good, Gruba, & Kaminski, 2002) testing system in order to gather more specific information about the students' reading levels. According to all of the participants, the reason for using the AIMSweb testing system was to determine whether the students were above or below 10th percentile at the students' grade level. Additional information about the students'

performance could be gathered from the general education classroom teacher and the school psychologist. The participants in this study agreed that it was important to gather data from multiple sources in order to ensure that the students were not evaluated based on a single test score but rather on average performance over time.

Both Ms. Deema and Ms. Aseel described using the Woodcock Johnson battery of tests when establishing an initial IEP. Another participant, Ms. Naz, added that, “I start an initial IEP by collaborating with the special education director, school psychologist, and the classroom teacher. [We looked at] his assessment testing and benchmark information, then we set a goal of what that student needs the most.” According to the AIMSweb system, students need to perform in the average range of the 40th or 50th percentile in order to benefit from general education classroom instruction, rather than needing special education services. The 40th percentile has been considered the cut-off point by AIMSweb; students who score below this level were at risk of not making adequate progress. Ms. Aseel said, “We also needed to have the AIMSweb data that indicated again that the student was performing below the 12th percentile or had a gap of 2.0.” It is worth noting that there was a discrepancy between the percentiles that the participants used as a cut-off line: one teacher used the 10th percentile, others used the 12th percentile, while 2 teachers mentioned that the percentile cut-off had recently changed in the district from the 25th percentile to the far lower 10th percentile.

*Establishing a baseline.* Once the above data were collected, teachers used it to establish the students’ reading baseline scores. These scores helped to determine at what percentile each student was performing, which gave an indication of his or her reading level compared to his or her peers. The cut-off percentile was important because it helped

to determine what instructional goals the student needed to work on. If the student scores were below the 10th percentile, it was clear that this student was not performing at grade level. Ms. Naz said,

So then I can determine what areas for percentile ranks where they would qualify under, then determine if it's basic reading skills, reading fluency, or reading comprehension. . . . Looking at that, if I need to determine more in which areas, I'll use other screeners or informal testing to collect data in the areas that they may be struggling.

However, participants indicated that, when it came in writing baseline in the students' IEPs, they always used the students' grade level baseline when writing the IEP goals. Ms. Eman said, "The baseline information that I'm gonna put in there [IEPs] is where his [student] reading right now as a fourth grader." Further, Ms. Aseel described how teachers used student evaluation data to determine whether or not the student demonstrated a learning gap compared to other same grade students.

To determine the gap, you take whatever the student score is and what the expected score for a student at the 50th percentiles is, and divide the score at the 50th percentile by the student's score. If the gap is 2.0 or more, then that's considered as significant skills deficit. . . . And that's kind of the state requirement for placement as a student with a specific learning disability.

In order to determine the student's actual reading grade level, participants agreed that the students' percentile level could provide important information. In discussing how the percentile could be used to establish instructional goals for a third grade student, Ms. Eman stated,

If you're doing AIMSweb or DIBELs and they're below the 10th percentile, then you go down to second grade. And if they are below the 10th percentile [in the second grade reading assessment], then you get the first grade. So you're trying to get what's called a survey [instructional] level assessment.

The final category of assessment information that teachers used was informal sources. Ms. Deema stated that she used different types of assessment to gauge where the students were on reading level. Participants shared that these informal data were particularly useful when the student was struggling, or not showing progress.

All participants agreed that they always started with the student's performance on grade level reading test to determine the student's baseline at that grade. Ms. Aseel described using the student's three most recent AIMSweb scores to determine an average score. Ms. Naz emphasized that it was important to use multiple data points, for example, from AIMSweb as well as DIBELS, and compare these to determine an average score. In her experience, these scores were often very close--in her words "being the same or just off by a little."

*Writing the reading goal.* Once the participants were able to determine the student baseline score and percentile according to grade level, they developed reading goals that would bring the student's score to the 25th percentile in the student grade level. Ms. Aseel said, "In terms of determining how to write the goal, if the goal is primarily fluency, we write a goal around AIMSweb charts, and we had been instructed [by the district] at 25th percentile . . . the very low average range." When asked why the participants chose to write reading goals to the 25th percentile level, Ms. Eman explained, "What we were doing was based off of the district. We would want our kids to be within the average range from the 25th to the 75th percentile, so we would use that initially as the minimum." However, not all teachers were as certain of the reason why they were writing goals to meet the criteria of the 25th percentile at the student's grade level. Ms. Naz shared that she frequently struggled in the interpretation of baseline data,

I'm still too much of a new teacher to just know it. Some of the other teachers that I've worked with, they know that data pretty well and they don't have to go to it [AIMSweb charts] but I don't know that. I'm still learning. So I always have to go back, and I always need to go and figure out, which 40th percentile is and what's the 25th percentile.

Ms. Deema also explained the reason behind writing goals was to meet grade level expectations for the student as well as to make sure that these goals were related to the grade level standards. She further shared that writing the goals at the 40th percentile reflected current best practices for goal writing and the primary reason to follow this best practice was to close the achievement gap.

Several of the goals used in the analysis were written above the student's actual grade level. Ms. Aseel described her rationale for writing goals above grade level,

Right now I'm testing a student that's in fourth grade. And so, the baseline information that I'm going to put in there is where his reading right now as a fourth grader. But because his annual review is going to be next year at this time, his goal will be written for fifth grade.

While none of the participants mentioned that they wrote IEP goals below grade level, they did share that they could monitor the students' progress when goals were written at the students' instructional level, both below and above actual grade level.

***Progress monitoring.*** All participants used either AIMSweb or DIBELS when conducting progress monitoring of students. However, participants mentioned that different progress monitoring tools could provide different information for the same student. Ms. Deema mentioned that, at her school, progress monitoring was currently being conducted using DIBELS. However, she discovered that the Lexiles (reading difficulty level) were set higher within DIBELS than in AIMSweb. So while students might be making adequate progress in reading fluency and vocabulary, this would not necessarily be reflected when using DIBELS in their progress monitoring. She said,

Some teachers and I were looking at that information when we were switching over, because we saw a drastic decline in scores when we switched from AIMSweb. . . . So where you might see more progress even with AIMSweb, you're not necessarily seeing it with DIBELS.

Moreover, the tool that was used to conduct progress monitoring impacted how, as well as in which areas, progress was reported. Ms. Deema explained that, although her school no longer used AIMSweb exclusively, she occasionally switched to use AIMSweb to gather information on some specific reading skills.

I think, in terms of what's mandated to be reported, we don't necessarily do progress monitoring on letter naming sound or letter naming identification. I like being able to do that, and also to see with the fluency component. There are times where I can use AIMSweb for that. So I'll switch just because we still have that opportunity.

However, most of the participants also used students' daily work and graphs from programs such as "Read Naturally," especially when working with students not making typical progress. Ms. Eman said,

I think some of the progress monitoring is hard too, because like you said there are ups and downs. And if it's a bad passage or a bad day or whatever, I don't feel like it's always what I see in [their] daily work.

When asked how often the participants collected progress monitoring data, Ms. Deema mentioned that she collected data biweekly. Ms. Aseel and Ms. Eman added that could be different from one student to another. The participants agreed it was often difficult to see typical progress with their students with learning disabilities. This was due in part to the highly individual nature of the students, as well as the limitations within the progress monitoring programs used. Ms. Aseel explained,

Even with the kids that go up and down, you still see hopefully some kind of a trend line that's going, and if I'm seeing that scores are staying the same, then I feel like I'm not making progress and there's something else I need to look at.



If the progress monitoring showed inappropriate progress, teachers usually searched for reasons why progress did not happen. Ms. Deema stated,

I have a particular student right now that I have not seen significant gains [with]. So I'm going back and looking at using other data to collect on him. What specifically am I missing with him in order for him to reach his target? And I also look at the interventions I'm using [and make ] sure I'm doing it with fidelity because I want to make sure they're all research-based.

The participants all agreed that they used benchmark data to determine the student's rate of improvement. Ms. Eman reported,

I decide what's the rate of improvement by look at those beginning-of-the-year benchmark, I look at the middle-of-the-year benchmark and where they should be at that time and look at where they are to look at that gap and determine if I'm, if what I'm doing is effective. So, and then I move on to the end of the year and see how, like, going back to reading fluency, how many words I'm missing right now with this student. To see what I need to do to close the gap, so I use a lot of times now a DIBELS, the benchmark, percentile ranks of where they should be. That helps me determine if they're improving with their rate of improvement.

All participants agreed it is very difficult to describe what progress looked like for all students. It was so individual and what could be considered great progress for one student might be too slow for another. Ms. Aseel shared that, if she saw a student approaching the goal that she sat for them at the student's instructional level, "then YES, I feel like we are making good progress, because you still set that based on low baseline." Ms. Eman described progress as, "Hopefully they are going up in their trend line." Ms. Deema monitored her students' progress in a number of ways,

If what I'm doing is effective. I move on to the end of the year and see how many words I'm missing right now with this student to see what I need to do to close the gap. I use a lot of times now a DIBELS, the benchmark, percentile ranks of where they should be. That helps me determine if they're improving with their rate of improvement.

When a student did not show adequate progress, Ms. Deema spent time examining factors that might affect the student's progress. She looked at a variety of data sources to determine specifically what was missing for the student to reach his target.

One of the things Ms. Deema considered was the interventions that she used,

If I'm using too many . . . I'm either looking at do I need to add an intervention or do I need to take away one, because sometimes, I think, you so badly want the kids to close the gap that but I've been at fault with this, where sometimes I may add additional interventions when I need to just really back off and do one at a time to see what's working and what isn't.

For students whose instructional level was below their grade level, Ms. Aseel conducted progress monitoring at both levels to check the student's progress. She used this technique when student progress "flat-lines" when the progress trend was flat. This allowed her to see if there was a measureable difference from the previous year's progress. Ms. Aseel believed that, if she saw growth at the first grade level, but a flat-line at the second grade level, this told her that the student was making progress with basic reading skills, yet not closing the achievement gap at that student's grade level. Ms. Naz explained that many of the students she worked with demonstrated highly uneven progress, sometimes scoring above the 40th percentile and sometimes below. When students demonstrated more of the higher scores than the lower scores, this was evidence that they were making progress. Ms. Naz considered this "up and down progress" to be common among students with learning disabilities. This was why it was important to use a variety of data sources and to assess each student individually.

**Theme 2: Writing grade level goals versus instructional level goals.** This theme emerged when the participants in this study discussed when the student had a significant gap in his achievement and how to balance between student's grade level

goals and instructional level objectives. While all of the special education teachers described writing reading goals at the student's grade level, they also acknowledged that, unless students received specialized instruction at their functional reading level, they would not be able to make progress on grade level goals. Some students were so behind in their basic, foundational reading skills that, unless objectives were written at the student's instructional level, their progress might flat line.

The participants explained that they wrote reading goals after first determining the student's instructional level using AIMSweb scores. However, if these scores indicated that the student was not performing at grade level, the special education teachers would assess the students on one or more grades below their current grade level. By assessing the student's reading performance at various grade levels, teachers could decide at which grade level the student was performing close to or above the 25th percentile and then could write reading objectives at that instructional level. Ms. Eman gave the following example of this practice, "If they're a third grader, and their reading instructional level is at first grade, then [for] some of them, we would write their goals based on that [instructional level]." Ms. Aseel worked at the student's instructional level through objectives rather than goals in order to achieve student's grade level goals, she said "I have always written the goal itself, the baseline has been at the student's grade level, and my goal is at the student's grade level, but I might have objectives below that at the student's instructional level." Ms. Deema added,

I think that if a student is in second grade, I don't want to modify that. Because I don't want to create a gap. I want to close the gap. So I feel like I still have to write that goal to second grade level. And I don't write an objective if it's a student with just a specific learning disability but knowing in my mind what I need to do to get to that level, I may have my own objectives in what I need to do in order to get there, but again, that looks more as skills deficit than it does a reading-level deficit.

In order to gain a true assessment of student progress, teachers found they needed to adjust how they conducted progress monitoring. Traditional grade level progress monitoring would often not show student gains accurately for students not performing at that grade level. So while teachers wrote a reading goal based on third grade reading levels, using third grade benchmarks, the objectives could be written at the student's instructional level. Ms. Eman described how providing instruction at the student's instructional level helped to actually close a learning gap. Ms. Naz agreed that using the student's instructional level as a starting point improved student's progress. This practice aligned with AIMSweb guidelines that stated, "An off-grade instructional level is indicated for a student who has not mastered important prerequisite skills or scores at the lower extreme on the AIMSweb screening measure" (AIMSweb, 2012, p. 8). However, the special educators agreed that, even when the objective was written at a student's below grade instructional level, it could be challenging for the student with learning disabilities to meet the objectives.

Even though it meant setting objectives at a lower grade level, progress monitoring could document that students were improving in specific reading skills. It could also document periods of increased learning. The participants all agreed that authentic progress monitoring should reflect student progress at their instructional level. Ms. Aseel said,

If I were only progress monitoring them at the third grade level, they're so far behind that they would not gain, really get one word more each time. But by progress monitoring them at the first grade level, they're at least picking up two or three more words each time I progress [monitor] them, at least it's going up instead of just being flat the same. So it's, it's kind of, it's motivational.

Another reason to conduct progress monitoring at the student's instructional level was to indicate how students were making progress. Progress monitoring at grade level often resulted in flat progress levels even when the student was making adequate progress towards instructional reading goals, something that could be troubling for parents and administrators alike. Ms. Aseel, who used instructional level progress monitoring, claimed, "If someone were to come and say, 'So what difference are you making with these kids?' Because their progress monitoring is flat. I'm reporting on progress both on the grade level as well as the goal or the objective."

**Theme 3: Writing realistic goals.** This theme emerged when teachers explained their perspectives regarding the rationale of writing IEPs and their own beliefs on writing realistic goals in order to meet student's needs regardless if these goals matched state, district, or any system guidelines. Ms. Aseel explained that IEP was mostly written to meet the state requirements, in her own words, "There is kind of the state expectation that goes into the IEP." However, they delineated that IEP was simply a legal document that indicated the student's identification, inputs from other professionals and students' parents, and designed age-appropriate goals. Teachers also claimed that IEPs were Individualized educational plan, Mr. Eman claimed,

IEP doesn't drive you on a daily basis, it's a framework! It's a framework for where we're going. And it's a piece of documentation that shows that the child has been appropriately identified. And that the things that you're working with on that child are appropriate for that child. And that you've gotten a lot of input from a lot of other people that it's not just me saying this. But it's the classroom teacher has added what they need to add to that, the parents have added what they need to add to that. Other specialist, the building have added what they need. And that there's teamwork, there's a lot of people that are looking in on this kiddo.

Ms. Aseel supported Ms. Eman in her perspective of the IEP role in everyday

practice:

It's documented on a piece of paper. That people can go back to and say, "Yeah this is where this kid was and a year later this is where we are now", but in terms of what happens between here and here in my classroom, do I go back and look at this piece of paper? Once a quarter when I'm writing my progress reports, is when I look at that again. Does it change the way I teach in between? Probably not, because I'm still working constantly to get the kid to grow.

She further explained that she based her teaching practices on the student's own performance not on what was included in the student's IEP. Ms. Aseel stated,

I'm bound by what the child is doing, to me an IEP it's a legal document to ensure that a student has been adequately identified, and that we are being held accountable on a yearly basis to look at that child's progress to make sure that we're moving them forward. It's a safeguard to make sure that kids don't just get stuck in programs and never get taken out. Just because they're in that program which happened before 1975, with 94-1-42. But I don't feel that the IEP itself is going to make or break the kid's learning.

Ms. Deema indicated that closing an achievement gap and achieving IEP goals should not be the goal of education. She believed that her work to close the students' achievement gap was not important as the need to supplement the students with methods and tools to help them independently overcome their educational challenges throughout their lives. Ms. Eman echoed what Ms. Deema stated that her primary role as a special education teacher was to make general education materials accessible to her students.

They have to be successful in the classroom. Because ultimately you want them to be successful in the general education classroom. I wish we can supplement them and give them some compensatory skills. Help them feel successful in ways that motivate them to at least want to pay attention in the general Ed classroom and get whatever they can get out of the general Ed classroom. I mean that's my goal.

Ms. Aseel emphasized the importance of classroom-based practices more than IEP goals:

That's really how I teach. That's what I base my teaching and planning on. I don't base my teaching and planning on what's in the IEP in terms of how many words a minute the child is going to read. Or how many correct answers they're going to get on their maze. it's classroom-based, and it is child-based. They're identified as a student with disability, and I can't make that disability go away.

Ms. Deema started questioning if 40th percentile was really a way to close the achievement gap. She said, "I don't know if necessarily the 40th percentile is a magic number, it's not the percentile rank, it's the kid." Ms. Eman explained that setting goals in a high percentile esd not helpful for the students: "It's hard! You feel like you're setting [the students] up to fail. Sometimes, you know when you're setting it too high. You want to have a goal and it's always easier if you can have an attainable goal." Ms. Naz also stated that it was pointless to set a goal that was not achievable. She said, "If a student can't achieve a goal then it wouldn't make sense. I wouldn't want to set a goal that I can't gain in a certain amount of time." Ms. Aseel also refused the idea that writing goals in higher percentiles could make a difference.

What is on the IEP, doesn't affect the progress. they're gonna progress at whatever rate they're gonna progress. I don't think that changes the intensity of what we do. We're still trying to close the gap, the percentile number isn't gonna change how fast and how hard we're gonna work.

Participants explained that setting attainable goals could help the student progress more than setting a goal in a high rank percentile. Ms. Naz said that she worked with the student based on his baseline not based on his goal,

I think you're still working at his baseline and he's going to progress where he's going to progress. Goals doesn't even affect it sometimes. We're working harder and they're working harder too. I would love it if there was something out there that would magically help kids. I don't know, but I am not writing the goal that they're not ready for I guess. It's something I wouldn't do if I'm planning on writing a goal for them. I'm not going to work on comprehending if they're still decoding. I want to be sure the goal I'm writing is matching what they need.

Ms. Eman explained a meaningful goal was to look at the student's instructional level, so the baseline gave more directions than the target, and you could do more with baseline than target. Ms. Deema also added that she worked so hard with the students and the goal was not her limit, if she noticed that the student could go beyond the 40th percentile, she would keep going beyond the student's goal.

We don't stop there! If the student goes to that 40th percentile, I'll actually continue on to make sure that student is really close the gap or if it's not one of those outliers, then that way we can determine if they actually still qualify for special education services or not.

Ms. Deema preferred not to devote her time in including specifics when designing a goal; instead, she believed that her main work was to do her maximum to help the students to conquer their academic challenges, "I appreciate not having to put that much specific in the goal, because you are able to do whatever it takes to get to that goal."

Ms. Naz also delineated that her teaching practices with the students were not only geared toward achieving specific goals written in the student's IEP, additionally, she embedded other goals into her instruction, "I don't work on just that goal. It's embedded with other things, so even if I'm doing a fluency goal, I might be working on comprehension at the same time." Moreover, Ms. Eman believed that reading comprehension was the ultimate goal for reading. She stated that, if the students could comprehend a reading passage, this could be sufficient even though the students might be slow readers. In Ms. Eman words, "Comprehension is really paramount. I don't care how



many words a minute. I mean nobody has ever come to you on the street and such, how many words can you read in a minute.” Ms. Aseel stated that, when she test her students and they understood what they were reading, not just literally but also at an inferential level, students became able to talk about what they read and compare it to something else, then she moved them up. Ms. Aseel provided a picturesque metaphor of how unrealistic goals could look like,

If I have a car that is a six cylinder engine and I'm pushing as hard as I can push on the gas pedal and it tops at 120 miles per hour, it's not ever gonna go any faster, no matter what. I think that a lot of times, our kids come to us with an innate ability to learn. Sometimes they have disabilities that go along with that. We certainly help them grow and become the best that they can become. But if they're running on a six-cylinder engine, there's nothing that I'm gonna do that's gonna magically turn them into an eight-cylinder engine.

Ms. Eman also gave an example of unrealistic expectations,

If you can put yourself back to being a first grader and being okay with reading first grade and making first grade work for you and someone came in to you and handed you something to read at the third grade level when you're a first grader. It's a higher reading level and you're not going to be able to read the third grade stuff because you're not ready for it yet.

### **Research Question 5 Findings**

The Research Question 5 explored, “What training do teachers receive regarding using AIMSweb data to establish reading goals? How does this training impact their future goal setting activities?” To answer the fifth question, the same analysis procedure was used from Research Question 4. However, only one theme emerged from the data analysis.

**Theme 4: Training.** The fourth theme discussed by the participants in this study was the training they received in developing appropriate reading goals for their students with special needs. The school district where these participants worked used a multi-level

approach to train special educators in writing IEP goals. All special educators in the district engaged in a monthly meeting with the special education administrator where they requested assistance from each other and benefited from other educators who used both formal and informal channels. Additionally, the district provided specialized training in using AIMSweb to monitor student progress.

A monthly meeting with the district special education administrator provided useful information about the district's policies and procedures regarding writing goals and using assessment tools in the goal writing process. Ms. Aseel described attending monthly meetings that addressed developing appropriate goals, "[There are] presentations, especially on what good goals look like. And how to write those, so they send those out, too, just so you have something to either model your goals." Several participants also shared that they were comfortable approaching the administrators with questions because the administrators were open and available for assistance. Ms. Deema said, "I would just go ask if I wasn't quite certain, because I wanted to make sure that I was adhering to what the district wanted me to do."

The district also managed to provide mentors for those special educators who requested a mentor. Ms. Naz shared that, when she first arrived in the district as an early career teacher, she realized that other, more senior special educators were available if she felt she needed help, "I could reach out to other teachers and they did set up a mentor." However, other participants shared that the process of eliciting assistance was far less formal. When asked how she learned to write appropriate reading goals, Ms. Deema shared, "I think it was mainly from other teachers." Ms. Naz expressed that she was fortunate that she could obtain assistance from any special education teacher whenever

she needed help, especially when she started her special education position, “I feel very fortunate because I can pretty much go to any teacher in the district, another special ed [education] teacher, if I had questions, especially when I had first taken on the special education job.”

Moreover, the school district offered specialized training in using the AIMSweb. However, several participants were unclear about how long ago that was and how AIMSweb was used to determine reading goal levels. When asked when she learned to write goals, Mrs Aseel said, “It would have been years ago when we had the AIMSweb training for establishing reading goals.” In discussing the shift between using DIBELS and AIMSweb, Ms. Deema stated that, during the AIMSweb training, the district provided learning labs, “We might have actually had an AIMSweb training. I know a lot of times, there was also learning labs where if we had questions.”

### **Emerging Unanticipated Theme**

During conducting the interviews, an unexpected theme emerged when teachers were talking about other and more important factors from their perspective to close the achievement gap of students with learning disabilities. The theme was “Factors effecting the achievement gap.” In this theme, the participants shared their experiences and ideas regarding closing the student’s achievement gap. These factors ranged between student’s factors, family’s factor, and school’s factors.

**Theme 5: Factors affecting the achievement gap.** The fifth theme emerged when participants discussed many influences that could affect student’s performance in school. While many school districts focused on writing special IEP goals to meet the 40th percentile of a student’s actual grade level, study participants did not agree that this

practice by itself was sufficient to close the academic achievement gap. Ms. Deema stated that there were other factors that played a part in closing the student's achievement gaps and her primary role as special education teacher was to identify those factors, "I do think, though, that there are other factors that may impact whether or not we can close the gap and part of my job is to figure out what those factors are." Ms. Aseel indicated that having well-designed IEP goals did not necessarily influence the student's progress, "I don't see progress based on what I put in their IEP necessarily." Study participants indicated that meeting the student's basic needs, evidence-based interventions and best practices, providing more time, reducing distractions, one-on-one instruction, and parents' and students' collaboration were important factors that could impact closing the students' achieving gaps.

As Ms. Deema emphasized the importance of meeting the *basic needs* of the students, Ms. Aseel discussed the importance of using *evidence-based interventions and best practices* when providing specialized instruction to students with disabilities. Using a good curriculum that offered a range of instructional activities was essential for student success. Ms. Naz suggested that providing students with *more time* to acquire foundational skills was critical to the progress of some students. Similarly, supporting students' unique learning needs by *reducing distractions and providing one-on-one instructions* could help students to focus on learning skills. Ms. Eman stressed the *students' factors*. All participants agreed that *parents and student collaboration* was a key factor in closing the achievement gap.

Ms. Deema stated that taking care of the students' basic needs was a critical factor that impacted her students' performance. When her students had their basic needs met,

they became able to concentrate on their school work. She said, "First I make sure their needs are being met, and then I move forward." She further claimed that the students' well-being was a considerable factor that impacted the student's performance, "When children are so hungry they can't focus; I have to feed them before they can learn." Therefore, Ms. Deema provided snacks to her students before they started reading as she noticed a change in their performance, "They focus and they even get more ready for like listening and doing." Ms. Deema also stated that she checked on other basic factors that could affect the student's performance such as, "Did you get enough sleep?" If the student wore glasses, she asked, "Did you bring them today?" She claimed that, if the student was having a bad day, "I don't test him on this day and I make a note, because I want to see again, is this something I'm doing or is this something that I have no control of." Another factor that Ms. Deema considered was what was happening in the students' lives.

Because, in one particular case, there's a new baby in the home. so there's a disruption. I want to take all of that into account, but then if I don't see that, I continue to measure progress, and I may do it a little bit more often, just to make sure that what I'm doing is effective.

Ms. Eman believed that it depended on selecting the appropriate program that matched the student's IEP goals.

If I am working on fluency and getting, having good programs that work on the fluency piece and planning. If I'm going to write the school, I know that I have things I can work on with them on a daily basis that's going to work on that.

Ms. Aseel also emphasized teaching by using good programs and instructional materials and also believed that, if the teachers devoted their time and effort to support their students, this would impact the students' progress. Additionally, Ms. Naz stated closing

students' achievement gaps required teamwork, "I mean it's, it's not, my, me, myself, all by myself in this room with this child, is not going to make the difference. I will make a difference but my difference will be bigger if more people are involved and it's a 24/7 thing with this child, not just inside the school day."

Ms. Deema expressed that students would progress a lot faster if she had more resources and time.

If I could work one on one with a student as opposed to having three students or four students in a group. I have 100% of his attention and he has 100% of my attention. It's the intensity is not there. Because there's other things going on with those other students.

Ms. Aseel also discussed students' factors that could help with closing the achievement gap.

With some students, everything clicks together! and once it kind of clicked, then the student moves more quickly and we moved through levels more quickly. We probably did that last year that with one of my fifth grade students. She did three different levels and read naturally and ended up at the fifth grade level.

Ms. Naz stated that some students did not necessarily have learning disabilities, instead, they might experience some temporary issues that impacted their learning and once these factors disappeared, students could easily close their achievement gaps, "Some students can close the achievement gap. Sometimes they do not have a learning disability, but they may have other factors that affect their ability to learn well." Ms. Eman also echoed the statement of Ms. Naz,

Some students start progressing more quickly and they might make a year's growth in six months. Because all of a sudden reading made sense to them. And so I might get closer to closing their achievement gap. But other kids maybe not. it's just so much on it. It's such an individual basis for every kid. I mean some kids just come with more ability to learn and more motivation to learn.

Ms. Aseel highlighted a very important factor to close the achievement gap. She said, "Over the years that I've taught, it depends on the student and home, in the homes

where education is valued, where kids are given the opportunity to practice skills at home as well as at school. Generally, I tend to see more progress.” Ms. Naz also linked the students’ improvement in their performance with “how much help are they getting at home.” Ms. Deema echoed that and emphasized the importance of the family as a critical contributor to the students’ progress; hence, she claimed that she consistently encouraged the parents to be involved,

Is so significant in some of the success stories I've had, for sure. It helps significantly when parents know you're on their side. A lot of times I find that in IEP meeting I had yesterday, parents to education, I don't think either one has a high school diploma, but they are working so hard to help their son, and they see the importance of school and, you know, just giving them kudos as much as possible, saying, "You guys are doing an awesome job. Keep it up.

However, Ms. Eman and Ms. Assel believed that not all the families have the time to work with their kids at home. Ms. Eman said, “The luxury of having time to work with their children at home for some parents, it's just not there. Because they're so busy trying to get food on the table and shelter over the kids heads.”

Ms. Deema also stressed the importance of involving the students in setting the IEP goals, encouraging them to see their progress, and developing their accountability toward their own learning. The student may say, “Well, next time I want to try to read five more words,” then I see progress. Ms. Eman claimed that, if students involved in setting their IEP goals, this could help them to close their achievement gap; however, most of the students did not understand their IEP goals although they were really trying hard too.

### **Summary**

At the conclusion of this chapter, in the quantitative phase of the research, the researcher found three main findings. First, the result showed that the proportion of

reading goals that met the AIMSweb guidelines was 25.71%. The second result showed that current IEP goals and percentiles that were written by special education teachers were not consistent with the AIMSweb guidelines for writing goals at grade level in the mid-average range. Finally, most of the students did not meet the needed ROI to close the achievement gap and only 5 of 30 goals were written with 100% accuracy. Only two goals were sufficient to meet the needed ROI and close the achievement gap.

Once the quantitative data were analyzed, qualitative interviews were conducted to provide insight into the process that teachers used to develop annual reading goals. Five main themes emerged from the results of the qualitative phase. The first theme discussed the procedure included conduct assessments, identify student's level of performance, set up the students' baseline, write the IEP goals, and collect progress monitoring data. The second theme was a discussion of writing goals at grade level versus instructional level. The third theme emphasized how teachers viewed the rational of writing IEP goals and being realistic of their expectations. The fourth theme discussed current training programs that help teachers to write appropriate goals. A final theme emerged unexpectedly. Although it did not answer a specific research question, information within this theme nonetheless provided important information about teachers' perspective of other factors that affect their students' achievement.



## **CHAPTER V**

### **DISCUSSION**

A sequential exploratory mixed-method research design was employed that consisted of two separate phases of data collection. The first quantitative phase of investigation was used to analyze existing Individualized Education Program (IEP) reading goals for students with learning disabilities (LD) in elementary school to determine whether these goals addressed grade level skills and if they were consistent with guidelines from AIMSweb, a progress monitoring system used in the elementary school. The second qualitative phase consisted of interviews with four special education teachers who had experience in using data-based evaluation to develop reading goals; the emerging data were used to understand how and why special educators made their decisions on writing these goals. In this mixed-method study, the procedures that special educators use for writing IEP reading goals for elementary students with LD were examined and their perceptions of these procedures explored.

Mandates to close the achievement gap focus on targeting mid-average grade levels in setting these goals regardless of the distance between the students' performance gap and their actual grade level with an assumption that setting high goals for the students will motivate them to make faster improvement. However, given the insufficiency of the research in the area of closing the achievement gap for students with LD in general and the shortage of understanding the relation of IEP goal setting and student achievement, the purpose of this study was to extend the information on what

constitutes best practices with regards to writing IEP goals with respect to closing or narrowing the achievement gap for students with LD.

In this study, each of the research methods used had equal priority and were equally important when it came to addressing the research questions. Data analysis was conducted separately for each method, while the findings were merged in the discussion. This chapter provides a discussion of each of the findings, the relationships between the findings in the two phases, limitations of this study, recommendations for practice, and finally the research implications for future study.

### **Summary of the Findings**

Five research questions were addressed in this study. The first question was “What proportion of IEP reading goals written by special education teachers for students with LD in 2nd, 3rd, 4th, and 5th grade are designed to address grade level skills consistent with the AIMSweb guidelines?” The criteria used to include goals to answer this research question reduced the original 45 goals to 35 to ensure accurate results. This question was addressed by calculating a frequency analysis of 35 existing IEP reading goals across three different types of goal levels (below grade level, at grade level, and above grade level) to determine the percentile level of the goals. The results showed that only nine of the 35 goals included in this analysis met the AIMSweb guidelines of writing a goal at or above the 40<sup>th</sup> percentile at the students’ grade level or above. Thus, the results showed that the proportion of reading goals that met the AIMSweb guidelines was 25.71%. Only three of 35 goals were at the mid-average percentile level (between 40<sup>th</sup> and 50<sup>th</sup> percentile), which equaled 8% of total goals.

The results from the first research question clearly showed that 26 of the 35 IEP goals in this study were designed to place the student in low percentile rank; however, the teachers showed patterns in each goal level when determining the percentile level. When teachers wrote goals below grade level, they tended to choose a higher percentile rank; when writing goals above grade level, teachers targeted a lower percentile rank; however, goals at students' grade level were frequently written between low and average percentiles rank. The average percentile rank used in goals written below grade level was the 61<sup>st</sup> percentile. The average percentile rank used in goals written at grade level was the 41<sup>st</sup> percentile. Finally, the average percentile rank used in goals written above grade level was the 27<sup>th</sup> percentile.

The second question in this study was "Is there a significant mean difference between the current reading goal scores of the students delineated in RQ1 and the AIMSweb National Norms Table scores at the 40th percentile?" A paired-samples *t*-test was used to compare the current goal scores and percentiles with AIMSweb scores and percentiles to answer this research question. The quantitative data showed that there was a significant mean difference between the IEP goals scores and percentiles and AIMSweb 40<sup>th</sup> scores and percentiles. The result showed a significant difference in the mean which indicated that current IEP goals and percentiles that were written by special education teachers were not consistent with the AIMSweb guidelines for writing goals at grade level.

The third question was "For the students delineated in RQ1, does the gap between student performance in reading and the AIMSweb grade level criteria decrease sufficiently so that a goal of grade level performance is either achieved or can be

reasonably projected?” To answer this question, three different Rate of Improvement (ROI) were calculated (Needed ROI, Student Actual ROI, and Current Goal ROI). A frequency analysis was used across three different types goal level (below grade level, at grade level, and above grade level) to determine how many goals (did not meet the goal, met the goal, or closed the achievement gap). The criteria used to include goals to answer this research question was stricter than the criteria used to answer the first research question. Therefore, only 30 of the 45 original goals were included in this analysis. Only 7 of 30 goals reached 100% accuracy, while only 2 goals were sufficient to close the achievement gap which was equaled to 6.57%, and interestingly both of these goals were written above the students’ actual grade level. In addition, the *t*-test data provided sufficient evidence to conclude that the needed ROI scores as listed in the IEP goals were not consistent with the students’ actual ROI scores as assessed during the progress monitoring and we could conclude that most of the students did not meet the needed ROI to close the achievement gap. The mean student performance was lower than the ROI needed to close the achievement gap.

The fourth question was “For the students delineated in RQ1, what were the processes that special education teachers used to determine student reading needs and related goals, and how did they explain their decisions?” In response to this question using qualitative results, three main themes were emerged from the interviews. In the first main theme, teachers discussed the procedure they used to write IEP goals. As suggested in the literature, teachers started with an assessment to identify student’s level of performance and then set up the student baseline to determine their instructional level (AIMSweb, 2012; Colorado Department of Education, 2016; L. Fuchs & Fuchs, 1993).

When the teachers had enough data on the student's level of performance and baseline, they started writing the IEP goals and identified the expected percentile level target. The teachers also wrote objectives in order to achieve annual goals. Finally, teachers collected progress monitoring data to assess student's progress and make decisions for future goals and intervention based on this progress.

The second theme was a discussion of how teachers viewed writing goals between meeting student's needs and grade level skills or what was called "Grade level versus instructional level." The third theme to emerge addressed how teachers viewed the rationale of writing IEP goals according to the district guidelines and the challenge of meeting student needs while being realistic in their expectations. In both of these themes, teachers' perspective on writing ambitious yet achievable goals that met students' needs were discussed. Teachers explained the importance of student-based practice and designing goals that helped students may progress regardless of the level of the goal.

The fifth question was "What training do teachers receive regarding using AIMSweb data to establish reading goals? How does this training impact their future goal setting activities?" Teachers shared that the information provided at district staff meetings, mentors, and support from other special education teachers were the main resources teachers used to write appropriate goals; however, all of the teachers shared that they would welcome additional professional development on writing goals

During the constant comparative analysis of the qualitative interviews, a final theme unexpectedly emerged, "Other factors that affect student achievement". In their discussion about closing the achievement gap, all of the teachers mentioned factors that affect student learning and performance apart from goal setting. These factors fell into

two main categories – school-related factors and student-related factors. Although this theme did not provide an answer to a specific research question, information within this theme nonetheless provided important information about teachers’ perspectives of the factors that affect their students’ achievement.

### **Discussion**

Current research into closing the achievement gap has identified several factors that have been found to contribute to closing or narrowing the gap. These factors include effective leadership in terms of district, site and distributed leadership teams, prioritizing student achievement by holding high expectations for all students by every stakeholder, implementing a standards-based curriculum with effective instructional practices, using assessment and other measurable data to meet student needs, and having highly-qualified teachers (Williams et al., 2005). Overall, the findings of this study seem to support current literature on several of the best practices of writing IEP goals and closing the students’ achievement gap (Bateman & Linden, 2006; Curran & Reivich, 2011; Shapiro, 2008; Welner & Carter, 2013; Williams et al., 2005; Yell & Stecker, 2003). However, the researcher found gaps that affected the implementation of these best practices in both the quantitative and qualitative findings. The quantitative findings indicate that the majority of annual reading goals examined were not written according to the guidelines required by the assessment system. That is, in accordance with the AIMSweb guidelines for proficiency, IEP goals need to be written at or above the 40<sup>th</sup> percentile at the students’ grade level. It is important to point out that in order for students to access the general education curriculum and benefit from grade level instruction, research has shown that students should achieve proficiency at the 40<sup>th</sup> percentile at their grade level. However,

many goals were written below the students' grade level but at a much higher percentile requirement (see Table 4). Additionally, a wide variety of percentile ranks were used at all goal levels. The qualitative findings indicate the procedures that special education teachers used to develop annual reading goals, and their rationale regarding setting those particular goals.

To write an appropriate annual goal, the literature identified comprehensive assessment of the student's needs as the first step that teachers needed to establish an IEP. Teachers need to use current and cumulative assessment to collect data about student's needs and strengths to make decisions based on these observations and assessments (Bateman & Linden, 2006; Curran & Reivich, 2011; Shapiro, 2008; Yell & Stecker, 2003). The special education teachers in this study used a variety of assessments including formal, informal, observation, and other specialists in the building to make a conclusion of the student's current level of performance. The teachers emphasized the importance of starting with comprehensive assessment to create more effective decisions about writing reliable and challenging goals. Their beliefs and practices regarding comprehensive assessment reflected the best practices reported in the literature.

The cornerstone for collecting the essential information to make these decisions was determining the student's instructional level. This assessment was a process where students were tested with their current grade level skills until a grade level at which they were successful was determined (AIMSweb, 2012). Students whose instructional level was below the 10th percentile of grade-level achievement would likely need specialized instruction to meet targeted goals in order to master essential below grade-level skills (AIMSweb, 2012). However, according to Table 4 baseline scores, the teachers used 25<sup>th</sup>

percentile as a cut-off score. In their interviews, teachers did not agree on a single cut-off score; one teacher used the 10th percentile, others used the 12th percentile, while two teachers mentioned that the percentile cut-off had recently changed in the district from the 25th percentile to the far lower 10th percentile. These disparities in practice by the teachers could be due to the recent changes in how to write goals within the district or perhaps due to the lack of effective training in writing goals matched with the assessment criteria. It seems clear that the teachers in this study did not have a systematic method to determine how to write appropriate grade level goals at the 40th percentile. While the teachers were able to describe how to determine a student's instructional level, none of the teachers interviewed could describe how to calculate a student's needed rate of improvement and use this information to write appropriate reading goals. The teachers in this study seemed to be confused about how to select the level of goals and objectives that would be most effective in helping their students narrow or close the achievement gap. Throughout the interviews, it became clear that although all of the teachers knew that district policy was for IEP goals to be written at the 40th percentile of the student's grade level, they did not understand how to do this, nor why it was important to do so. During the interviews, teachers expressed different beliefs about the value of these different percentiles in addressing actual needs of students. One reason for this may be their lack of understanding of the AIMSweb guidelines currently used by their district. Another reason for this may be that the teachers worked with students who were one or more years behind their peers in academic achievement. These teachers identified a number of factors that affected student achievement apart from goal setting and high expectations, including students' lack of interest or experience in reading, lack of family



involvement, and using curricula that does not capture students' interest. A strong theme that emerged from the qualitative data was the conflict between grade level expectations and the need to support students at their instructional level.

According to the Colorado Department of Education (2016), teachers must identify a student's instructional level of academic achievement as evidenced by current data and then outline a reasonable learning progression toward mastery of the annual goal. Improving students' foundational skills and narrowing the gap between the student's current performance and grade level performance is one of the stated purposes of special education. During interviews, the teachers stressed the importance of knowing the student's baseline score. Ms. Eman shared that in order to develop a meaningful goal, teachers had to determine the student instructional level; thus, the baseline score gave more information about the student than did the target goal. Mrs. Aseel said that she worked with each student according to the baseline score rather than the target goal. Again, this reflected one of the recurring themes in the data--the conflict between writing IEP goals at grade level and the need to meet individual student's functional learning needs.

Based on the baseline information, IEP goals must then be linked to the relevant content standard or targeted benchmark to create annual goals and short-term objectives (Curran & Reivich, 2011; Shapiro, 2008). According to Colorado Department of Education (2016), "There is no one specific method of constructing an annual goal; the unique needs of the student drive that decision" (p. 32). This statement aligns well with the results of this study. The teachers in this study wrote goals that they believed supported the instructional level of their students, based on comprehensive assessment

and progress monitoring of individual students. The quantitative data show that few of the reading goals examined in this study were written according to AIMSweb guidelines for writing a goal at the students' actual grade level at the 40th percentile or above. However, approximately 30% of the goals examined were written below grade level, while nearly 40% were written above grade level. Students who performed one or more years below grade level, generally had goals written below grade level. However, for those students who performed in the lower percentile rank at grade level, teachers usually wrote reading goals at grade level. These grade level goals were designed to provide students with targeted instruction and supports that allowed them to catch up with their peers. Teachers tended to write above grade level goals when the IEP was established in the spring semester and this IEP would carry over into the next grade level by at least one semester. In explaining their reasons for writing these particular goals, the teachers said that it was important for them to write an attainable goal, one that would encourage and motivate their students toward achievement. Several of the teachers shared that if the goal was too high for the student's actual instructional level, it was difficult for the students to show progress, and that this was very disheartening for them. One of the teachers interviewed shared that while she wrote annual goals at the students' actual grade level; she frequently wrote objectives at the student's instructional level for those students whose performance was one or more years below grade level. However, not all of the teachers used this approach. This suggests that although they knew the district requirements, the teachers were still using a variety of methods to develop goals and that their focus was on meeting the needs of their students as they perceived them. This again stressed the conflict these teachers experienced between writing goals at the student's

grade level and writing ambitious yet realistic achievement goals based on the student's actual performance. However, regardless of whether these goals were written above, at, or below grade level, only 7 of 30 (5 below grade level, 1 at grade level, and 1 above grade level) goals were actually being met. This indicates that many of the goals were ambitious, regardless of the level at which goals were written, and that goal level was not the determining factor in whether these goals were being met.

Research supports writing goals at different instructional levels based on the width of the achievement gap. L. Fuchs et al. (1993) proposed that for some students, it may be appropriate to write annual goals below their actual grade level when this decision is based on progress monitoring of the student. This approach also ties in with the best practice of using data-based decision making to determine goals. According to Shapiro (2008), "Clearly, setting goals that are realistic yet challenging are crucial to making the ongoing decisions within a problem-solving model" (p. 142). The U.S. Department of Education (2008) defined data-based decision making as a systematic approach to using student data to determine the effectiveness of instructional activities and continually improve instructional approaches to support student learning and academic performance. Research shows that the teachers who used student data to guide and update their instructional approach were more effective than those who did not make use of these data (LaRocque, 2007). The qualitative data from this study suggests that when the teachers used the student instructional level data to design the goal, they were more confident that this goal would be more attainable for the student. However, the quantitative data showed that students only reached their goals with 100% accuracy in seven of 30 goals and that only two goals resulted in student progress sufficient to close

the achievement gap. Both of these goals were mid-year goals and were written above grade level. This aligns with research by Cronin et al. (2009) and Chudowsky et al. (2009) who found that of the schools studied, only 2% to 6% of students with disabilities met the target goals for AYP. Still, the Colorado Department of Education (2016) requires that teachers write goals based on grade level standards. The only exception is for those students who are identified with a significant cognitive disability and whose progress could be determined based on alternate standards of achievement.

Every special education teacher interviewed discussed the challenges of writing goals at grade level for students who were not performing at grade level. This was less challenging for those students whose performance was at or close to grade level. However, for those students who lagged farther behind their peers, who learned at a slower pace, and who needed higher levels of supports, it seems unrealistic to expect that these students will narrow the achievement gap by learning at an accelerated rate, faster than typical students, during the course of one school year merely by setting a grade level goal. By definition, students who receive specialized instruction are not demonstrating grade level academic achievement in the general education classroom. They need different types of support to assist their learning than their typical, grade level peers, and may not achieve the same level of academic competence. In their discussion about writing goals according to the students' grade level instead of at their instructional level, all of the teachers expressed concern that rigid district requirements could result in some students not receiving the unique supports they needed to make progress. While they all agreed on the importance of having high expectations for their students, they also noted that for some of their students, the expectation that they would perform at grade level was

unlikely for those who were more than one year behind their peers and still struggling to master the critical prerequisite skills necessary for academic achievement at grade level. The teachers expressed concerns that writing a grade level goal could mask or hide the unique learning needs of some students.

Another crucial decision that teachers needed to make was to determine the goal percentile level. According to the AIMSweb Progressing Monitoring Guide (2012), “Students who perform in the average range relative to their same-grade peers from their own district are likely to benefit from the core instruction provided in that district.” Therefore, designing goals that brings student achievement up to the 40<sup>th</sup> percentile allows that student to take full advantage of general education classroom instruction. The AIMSweb guidelines specify that, whenever possible, goals should be written to reflect the mid-range percentile rank, between the 40th and 50th percentile. Teachers in this study agreed that writing reading goals at the 40th percentile reflected the district requirements for goal writing and they indicated that they understood that the primary reason to follow this practice was to help their students to close the achievement gap by eventually meeting grade level expectations. However, the quantitative data show that teachers used a wide variety of percentile ranks when developing goals. This suggests that these teachers may not understand that student access to the general education classroom relies on performing at the 40th percentile at their grade level. Additionally, it indicates that teachers are not using a systematic approach to developing goals that target student achievement at the 40th percentile.

However, the participants did not agree that writing reading goals at the student’s actual grade level was the best practice for all students with LD. Their experience was

that while this approach generally worked well with those students who were close to grade level achievement, especially those who had other factors that affected their learning and slowed their achievement, such as student interest in reading or lack of family involvement. Yet for those students with more significant gaps in achievement, whose academic progress was more severely impacted, teachers appeared to rely more on their own understanding of their students' needs according to their assessment of the student and wrote goals according to the students' instructional level. They were willing to try new approaches but if they did not see their students were making progress, they reverted to previous, more effective practices. Instead of focusing on closing the achievement gap, several of the teachers interviewed shared that their focus was on providing instruction in foundational skills. This, they believed, would help the student to catch up to his peers, thereby providing him with access to the general education curriculum. Although this approach is not consistent with the district requirement of writing grade level goals at the 40th percentile, it is consistent with research supporting the need to provide instruction at the students instructional level (L. Fuchs & Fuchs, 1993) as well as the current AIMSweb Progress Monitoring Guidelines (2012) that states, "An off-grade instructional level is indicated for a student who has not mastered important prerequisite skills" (p. 10).

The quantitative data from the IEP analysis show a significant mean difference between goal percentile rank level compared to the mid-average percentile rank (40th percentile), with most percentile ranks used being either higher or lower than mid-average. The results also showed an inverse relationship between the goal level and percentile rank. As the goal level increased, the percentile rank decreased and as the goal

level decreased, the percentile rank increased. Teachers explained that they wanted to place their students within the average range between the 25th to the 75th percentile, however, when determining the appropriate percentile rank, they relied on the students' baseline rather than their grade level. Several of the teachers argued that the 40<sup>th</sup> percentile was not a magic number that would automatically close all students' achievement gap. There was wide agreement among participants that ignoring student data and committing to a single percentile will not be helpful for all students. For some students, especially those performing more than one year behind their same-age peers, they felt that this high percentile rank would set the students up to fail. However, placing students in a lower percentile rank has consequences for students as well; research clearly shows that when students perform below the 40th percentile at their grade level, they have limited access to the general education curriculum. It is therefore important to provide specialized instruction to bring students up to the 40th percentile level.

While all of the teachers received information about the district guidelines regarding writing grade level goals, they did not receive comparable training in using progress monitoring data to set achievable objectives based on the student's current and expected rate of improvement. The qualitative data clearly show that the teachers excel in conducting assessments, and are willing to use a wide variety of formal and informal assessments to gain insight into the unique needs of their students. However, this quantitative data indicate that the teachers are also using a wide variety of approaches when using student assessment data to write annual reading goals. It is hard to defend the idea of high expectations without having a clear idea of how to do it. Thus, to truly support the special educators who work with these students, teachers need training that

provides a systematic approach for writing ambitious and effective objectives for students who demonstrate a significant gap at grade level.

When the teachers felt that the guidelines of writing goals did not support the needs of their students, they became disconnected from the process, seeing the IEP only as a legal requirement instead of an integral plan to providing students with appropriate services. Teachers stated that their rationale for writing the IEP was simply to meet the state requirements. They did not seem to view the IEP as a means to ensure high standards of education. This suggests that when teachers write annual goals that are unrealistic to them, they tend to not follow the plan during their daily instruction. Clearly, there is a significant gap in how teachers understand the connection between the IEP and their instructional practices (L. Fuchs et al., 1993). The teachers in this study were extremely focused on meeting the needs of their students, and were passionate in their belief that successful programs must be classroom-based. However, they did not believe that the IEP would provide them with a sufficient framework that helped to drive their daily practice. The researcher noted that the teachers in this study were frustrated by the assumption that writing IEP goals at grade level would help all students close the achievement gap. Although they tried to meet the district requirements when writing goals, their focus remained on providing students with the supports they need to make strong, measureable progress.

The teachers in this study were willing to use any and all assessment tools, instructional methods, and curricula to meet the needs of their students. It follows, therefore, that if the teachers felt that the IEP was a useful document to them, they would use this to guide their practice as well. While the best practice of writing annual goals at



grade level should be continued, finding ways to include objectives written to address student needs within the goals should also be a district's goal. In this way, the special education teachers can put their thorough assessments and knowledge of student needs into developing objectives that directly target the foundational skills students may not yet have acquired, thus addressing the gaps in learning demonstrated by the student. The teachers stressed that after determining the annual goal level and percentile, one of the most effective practices that helped students to improve their achievement was writing realistic and attainable objectives. They stated that it was significantly beneficial to students when these objectives were connected with the right curriculum and instructional program. Research supports the importance of setting objectives based on student assessment data (Brookhart, 2008; Hattie & Timperley, 2007; Pintrich & Schunk, 2002; Shute, 2008). While research has shown that writing attainable and measurable objectives supports student learning, findings from this study seem to indicate that this practice would benefit special education teachers as well, ensuring that the IEP becomes a more interactive document in their instructional planning.

The final step of writing appropriate IEP goals was measuring student progress on these goals and objectives using accurate and ongoing assessments. Research has shown that effective progress monitoring enables teachers to make informed instructional decisions at the individual and classroom levels (AIMSweb, 2012; D. Fuchs & Fuchs, 2006). In addition, progress monitoring has been the main technique through which teachers make determinations of whether or not students were benefitting from the typical instructional program (D. Fuchs & Fuchs, 2006). Using data-based decision making has assisted teachers in making changes to their instructional strategies and has delivered

appropriate and effective interventions to students who struggled in the classroom (Kratochwill, 2008).

The teachers in this study used a wide variety of progress monitoring approaches that were tailored to their individual student's needs. Although all of the teachers used the AIMSweb progress monitoring system, they differed in how frequently they monitored student progress, as well as how many data points they deemed necessary to collect. One issue they brought up was that many of their students with special needs made slower progress than their typical peers, which was often not captured well by AIMSweb. They also differed in their opinions of how they determined whether students were making sufficient progress. Additionally, all of the teachers interviewed found that the progress monitoring systems demonstrated a lack of sensitivity to student progress. The data from the AIMSweb system often did not illustrate the actual growth that students were making. Progress monitoring at grade level often resulted in flat progress levels even when the student was making adequate progress towards instructional reading goals, something that could be troubling for parents and administrators alike. In order to encourage and motivate their students, they used students' daily work and graphs from reading programs which showed student progress more clearly to their students. One of the teachers focused on areas where the student was successful; Mrs. Eman stated, "Comprehension is really paramount. I don't care how many words a minute. If the student reads and compares it to something else, then I move them up". Teachers also noted that different program systems could give different levels of progress; they stated that AIMSweb usually showed more growth in student progress compared to DIBELS.

In the literature, one way to predict student growth is to use the calculated ROI technique. However, none of the teachers interviewed described using ROI to determine progress. Two of the teachers agreed that they used benchmark data to determine the student's rate of improvement. However, making a decision about what constituted adequate progress was another disagreement point. This suggests that although there are evidence-based methods available to assist teachers in determining student progress, these teachers were not aware of this particular approach and were therefore not using it. Instead, they used phrases such as "the trend line is going up" and "demonstrated more of the higher scores than the lower scores," or sometimes "up and down progress." Although all of the teachers clearly stated that progress should not be a flat line, they did not offer a clear approach to what adequate progress should be.

During the interviews, the teachers emphasized the difficulty of seeing typical progress in students with LD. This was due, in part, to the highly individual nature of the students, as well as the limitations within the progress-monitoring programs. Teachers claimed that these factors made it challenging to describe what progress looked like for some students. What could be considered a great progress for one student might be too slow for another.

It was clear that teachers in all the steps of writing IEP goals stressed on the importance of the best practices as one choice to consider but they always created alternatives as an attempt to meet the individual needs of their students. Teachers believed that working on closing the students' achievement gap was not always as important as providing students with methods and tools to help them independently overcome their educational challenges and become successful in the general classroom as

well as throughout their lives. This highly student-centered approach was repeated multiple times throughout the interviews. Philosophically speaking, it denotes a different view of the purpose and value of education than the performance-based, accountability view of education. These teachers argued that closing the achievement gap and achieving IEP goals should not be the final goal of education.

The teachers also identified a number of factors that have a profound impact on whether or not students can close the academic achievement gap. They noted that for some students, when “everything just clicked together”, the student moved more quickly towards their goals. For other students, the “click” did not occur, and progress continued at a slower pace. Research has shown that when students were provided with extended learning time and instructional persistence, the academic performance gap frequently decreased (Welner & Carter, 2013). All of the teachers in this study shared a desire for more resources and additional time to work with students in one-to-one situations as well as having a wider selection of tools and programs to choose from, according to the needs of their students.

The teachers stressed the importance of family involvement; they noted that students who had families that valued education and supported their children at home were more likely to show progress at school. This finding aligns with research on the family involvement in that when parents were more involved in their children’s schooling, students demonstrated better academic performance (Barton, 2003). Having a positive relationship with the student’s family is important to improving the student’s motivation, achievement, and educational goals. However, not all families are able to work with their children at home; families from low-income households may spend a

majority of their time working to provide for their children's basic needs. For students in this situation, schools should provide alternatives that offer academic support, including after-school reading programs, access to technology, and access to the library after school time, and reading buddies. Teamwork and collaboration among teachers, school specialists, districts, family members, and community services provided the best opportunities for the students to enhance their reading abilities at different times and places.

Preparing qualified teachers with intensive and frequent training would help teachers with accurate implementation conducting accurate assessments, progress monitoring, data interpretation, writing ambitious yet appropriate goals, and effective data-based decisions making. Haycock (1998) stated that improving standards, curriculum, and teachers could help school districts close the achievement gap among minority students. The teachers in this study seemed very confident in using AIMSweb as a tool to monitor students' progress, yet they seemed less confident about how to use the data from AIMSweb to determine the level of annual goals. In addition, several of the special education teachers interviewed appeared to be confused about district requirements regarding goal writing, in particular the use of targeting specific grade level percentiles. While they knew they should write goals at the 25th or 40th percentiles, they could not explain why this was important. Moreover, the teachers were not able to describe how to calculate a student's rate of improvement and use this information to determine whether sufficient progress had been made.

## Conclusions

The purpose of special education is to serve students with disabilities through specially designed instruction, using evidence-based interventions as well as systematic evaluation of both progress and support needs in order to provide instruction that is tailored to meet the individuals needs of each student. The findings of this study suggest that while special education teachers follow evidence-based guidelines for conducting assessments, identifying student learning needs, and determining their students' instructional level, they are not following evidence-based guidelines for writing goals or using evidence based approaches for determining student progress.

The quantitative results showed that only nine of the 35 annual reading goals analyzed met the AIMSweb guidelines of writing a goal at or above the 40th percentile rank at the students' grade level or above. Additionally, just three of the 35 goals were written to target student achievement at the mid-average percentile rank (between 40th and 50th percentile), while 26 of the 35 goals were written to place the student in a lower than average percentile rank. This makes it difficult to determine whether instruction is effective and whether students are, in fact, narrowing the achievement gap. Findings from this study did not address whether writing goals following the AIMSweb guidelines resulted in higher achievement among students. Rather, the purpose of the study was to examine whether special educators are using these guidelines consistently when writing readings goals for their students with LD, and if they did not, exploring why.

One strong theme that emerged from the qualitative data of this study was the importance of using evidence-based assessment and data-based decision making when determining annual reading goals for students with LD. All of the teachers agreed on

using a wide range of assessments to determine their student's unique needs for learning supports, instructional level, and annual goals. However, there was less agreement among these teachers about selecting the appropriate goal level and percentile target when writing goals, despite the fact that the district supplied clear guidelines for writing goals. Still, the teachers seemed to be confused about the rationale behind following one formula for choosing the goal grade and percentile level for all students, regardless of their instructional level and support needs. They also used a wide variety of methods to monitor progress, and make decisions regarding what data to take into consideration when determining annual reading goals.

To determine the goal grade level, teachers usually made their decision based on the width of the achievement gap and their student's instructional level. If the student's instructional level was one or more year below grade level, teachers tended to write goals based on his instructional level, focusing on the students' missing foundation skills. If the student demonstrated below average performance at grade level, teachers usually wrote goals at or above the students' grade level, based on the IEP semester. Teachers seemed to write at grade level goals when the IEP was written in the fall and wrote above grade level goals when the IEP was written in the spring. Qualitative data suggest that the teachers' rationale for selecting specific goals was based in part on data from progress monitoring and in part of the teachers' understanding of child development and their belief about what each student needed to make progress.

Determining the percentile level rank for students was highly inconsistent among the teachers; quantitative data revealed that teachers used a wide variety of percentile ranks when writing goals. Neither the quantitative nor the qualitative results could

explain why teachers chose a particular percentile rank for the goal. However, quantitative data indicate that teachers seemed to choose higher percentile rank when writing below grade level goals, about average percentiles rank for at grade level goals, and low percentiles rank for above grade level goals.

When it came to conducting progress monitoring, the teachers' experience was that progress varied greatly between students, both in terms of achievement and speed of learning. To the teachers, comparing such varied rates of progress to an average, grade level ROI was not helpful when their goal was to encourage their students to the highest performance possible, regardless of progress rate. Using an ROI calculation that suggests that students with special needs must learn at accelerated rates to narrow or close an achievement gap was not considered a convincing approach to these teachers. Instead, these teachers used the students' current baseline when setting goals.

There were clearly differing opinions among teachers about what data were best to use in making data-based decisions for optimal outcomes, given the vast amount of data that was available and the variations in how to interpret this data, particularly in respect to percentiles and grade levels. This also brought up the challenges that teachers faced in writing goals that met district standards and writing annual goals that they felt met the needs of their students. The IEP needs to be a living, relevant document rather than a lifeless piece of paper in a file which exists just to provide documentation of district compliance. It seems clear that when special educators are faced with requirements that make improbable demands on their students, they tend to select one the following three recourses. The first is to write IEP goals that they know their student cannot achieve. The second is to write IEP goals at their students' assessed instructional



level even when this could result in the teachers themselves being reprimanded. A third alternative, which has been seen in other school districts across the United States, is to falsify student records, particularly in the area of progress and achievement. The teachers interviewed for this study were very clear that they worked with students who had learning challenges which could only be resolved through supporting their individual learning needs, and that they were dedicated to providing high quality instruction to meet these needs. However, both the quantitative and the qualitative data indicate that these teachers are using a variety of approaches when it comes to determining annual reading goals. The quantitative data show that teachers wrote annual goals across three different grade levels while using a wide variety of percentile ranks to place students at a specific level of performance. A majority of the goals were written at a low percentile level.

Using a more systematic approach to setting annual goals would likely benefit both teachers and students, although it is not clear that this alone would help to narrow or close the academic achievement gap between students with LD and their typical peers. There is a prevailing notion that students with LD who are 12-24 months behind their grade level peers will be able to make 12-24 months of progress within a single school year, given appropriate instruction and support. The teachers in this study did not agree with this notion. They all thought that adopting a single formula on which to base educational decisions does not address the complexity of students with LD who they work with. The Individualized Education Program is the governing document in special education . Based on the premise of IDEIA (2004), these individualized education programs contain goals and objectives that are based on an assessment of student performance, and thus do not always align with grade level expectations. When teachers

are required to write goals using a “close the gap formula,” instead of based on their assessment of the students’ instructional needs, they often feel disconnected from the students’ IEP. They clearly believed that writing a goal below grade level for a student with LD who demonstrates a significant gap could be considered a high expectation goal if it is placed within the context of assessment and progress monitoring.

Research investigating the proportion of students with disabilities who closed the achievement gap between students with and without disabilities, including this research, has concluded that no more than 7% of the students with disabilities closed the academic achievement gap, even when provided with highly trained special education teachers and evidence-based, appropriate interventions. Policy makers need to use these data to guide their expectations of the number of students who will close the achievement gap, and to develop programs that support schools and teachers by creating an educational system that aims to authentically support student learning and celebrate all learning outcomes. Since these programs would serve students with special needs, many of whom do not perform at grade level, an assessment of the function of these programs needs to look at criteria that support students’ learning needs in addition to student performance. Evaluations of these programs should be based on quality indicators rather than students’ standardized test scores.

Focusing on a broader program evaluation within special education would uncover the true needs of teachers working with students with special needs. Interviews conducted with the special education teachers in this study revealed that many felt the need for ongoing, relevant training, especially in the area of using student data to make decisions. While they clearly knew the guidelines for their district, most if not all of the

teachers were confused about why they were required to write grade level goals for students who were at vastly differing instructional levels as well as how they were expected to align student assessment with district requirements. Ongoing, effective professional development that addresses both the guidelines and the rationale behind these guidelines is essential every time districts change the rules, programs, curricula, tools, and also simply to refresh previous trainings

### **Limitations of the Study**

There are several limitations in this study. First, the quantitative data consisted of existing data spanning a one-year period and collected within a single semester. The researcher cannot guarantee that the findings in this study would match findings using data collected during other periods of time. Second, student data could be affected by a grade level change as well as by regression during school breaks. Some of the student IEPs started during the fall semester while others started during the spring semester. Third, the quantitative data that were collected were not consistent, in that different teachers used progress-monitoring differently. For example, the number of data points varied between different IEPs. However, the same progress-monitoring system was used in all of the IEPs analyzed in this study. The researcher is nevertheless confident that the analyses of data offered reasonable representations of the patterns of growth in these students. Fourth, the small sample size used during the qualitative phase of the study also constitutes a limitation for this study, and limits the generalizability of the findings. Additionally, while the researcher collected data from four special education teachers who worked in the same school district, their experiences were highly varied, in part due

to the length of their teaching experience. However, one strength of this study was that their comments and insights were echoed in the literature used in this study.

### **Recommendations for Practice**

Findings from this study indicate that special education teachers face several challenges in writing appropriate IEP goals that are geared towards closing their students' achievement gap. Although the participants were familiar with district guidelines for writing goals, their student assessment data often did not support writing grade level goals. The researcher concluded that in order for special education teachers to write goals that meet the prevalent assessment guidelines and support the true intent and purpose of the IEP process, teachers needed ongoing professional development that addressed both the guidelines and the rationale for these guidelines, as well as ways they could incorporate support for each student's specific and individual learning needs. The following recommendations are proposed in response to these challenges:

1. It is recommended that special educators should be encouraged to follow the recommended best practice for writing annual goals at the 40<sup>th</sup> percentile in students' grade level while also writing objectives that support these students' individual learning needs. This supports both best practices in goal writing and best practices in supporting student achievement.

2. It is recommended that school districts provide ongoing, intensive and systematic professional development for special educators regarding writing goals and objectives to ensure that these meet both district guidelines and individual student needs. This will ensure that both new and experienced special educators are using the same

systematic approach when developing annual goals and objectives and that they stay up to date with the latest research and trends.

3. It is recommended that teachers receive training in writing measurable objectives that link to the curricula, progress monitoring programs, and instructional approaches currently used by the district.

4. It is recommended that the district conduct ongoing data collection to determine whether consistently following district guidelines for goal writing has a measurable effect on student achievement.

5. It is recommended that school administrators encourage special educators to work in teams when writing IEP goals, arranging frequent team meetings where teachers can analyze student data and make appropriate programming decisions based on that data.

### **Recommendations for Future Research**

Based on the findings of this study, the researcher provides the following recommendations for future research questions:

1. Replication of this study is needed with larger and more diverse sample of students and spread over longer length of time.

2. Research is needed into strategies and practices that help students with LD narrow and close the academic achievement gap.

3. Additional research is needed into whether high expectation goals, i.e. goals written at the students grade level at the 40th percentile, result in improved student outcomes.

4. Additional research is also needed to determine how instructional level objectives can be used to support student progress towards grade level goals.

5. Research into effective extra-curricular programs for students who are academically at risk is needed to determine how best to support the learning needs of these students outside of the special education classroom.

6. Research on the development and implementation of different progress monitoring systems is needed to develop approaches that are more sensitive than current programs, and that take into account the different growth rates demonstrated by students with disabilities.

## REFERENCES

- AIMSweb. (2012). *AIMSweb progress monitoring guide*. Bloomington, MN: NCS Pearson, Inc.
- Albrecht, S. F., Skiba, R. J., Losen, D. J., Chung, C. G., & Middelberg, L. (2012). Federal Policy on disproportionality in special education is it moving us forward?. *Journal of Disability Policy Studies*, 23(1), 14-25.
- Allbritten, D., Mainzer, R., & Ziegler, D. (2004). Will students with disabilities be scapegoats for school failures? *Educational Horizons*, 82, 153-160.
- Ardoin, S. P., Witt, J. C., Connell, J. E., & Koenig, J. L. (2005). Application of a three-tiered RtI model for instructional planning, decision making, and the identification of children in need of services. *Journal of Psychoeducational Assessment*, 23, 362-380.
- Armstrong, J., & Anthes, K. (2001). How data can help: Putting information to work to raise student achievement. *American School Board Journal*, 188(W), 38-41.
- Baer, R. D., Griffin, M., Franco, F., Fast, P., Loveless, T., Carlson, V., Keene, R., & Brown, G. (2006). Integrating response to intervention and severe discrepancy in specific learning disabilities determination: The best of two worlds. *Utah Special Educator*, 26(4), 66-71.
- Barton, P. E. (2003). *Parsing the achievement gap baselines for tracking progress*. Princeton, NJ: Educational Testing Service.

- Bateman, B. D., & Linden, M. A. (2006). *Better IEPs: How to develop legally correct and educationally useful programs*. Longmont, CO: Sopris West.
- Becker, B. E. & Luthar, S. S. (2002). Social-emotional factors affecting achievement outcomes among disadvantaged students: Closing the achievement gap. *Educational Psychologist, 37*(1), 197-214.
- Bellini, S., Henry, D., & Pratt, C. (2011). From intuition to data: Using logic models to measure professional development outcomes for educators working with students on the autism spectrum. *The Journal of the Teacher Education Division of the Council for Exceptional Children, 34*(1), 37-51.
- Berg, B. L. (2001). *Qualitative research methods for the social sciences* (4th ed.). Long Beach, CA: Pearson.
- Berkeley, S., Bender, W. N., Peaster, L. G., & Saunders, L. (2009). Implementation of response to intervention: A snapshot of progress. *Journal of Learning Disabilities, 42*, 85-95.
- Bordeaux, R. (1995). *Assessment for American Indian and Alaskan Indian Native learners*. East Lansing, MI: National Center for Research on Teaching Learning. (ERIC Document Reproduction Service No. ED385424)
- Bradley, R., Danielson, L., & Doolittle, J. (2005). Response to intervention. *Journal of Learning Disabilities, 38*(6), 485-486.
- Bradley, R., Danielson, L., & Doolittle, J. (2007). Responsiveness to intervention: 1997 to 2007. *Teaching Exceptional Children, 39*(5), 8-12.
- Brookhart, S. M., & Nitko, A. J. (2008). *Assessment and grading in classrooms*. Prentice Hall.



- Brown-Chidsey, R., & Steege, S. M. (2005). *Response to intervention: Principles and strategies for effective practice*. New York, NY: The Guilford Press.
- Callender, W. A. (2007). The Idaho results-based model: Implementing response to intervention statewide. In S. R. Jimerson, M. K. Burns, & A. M. VanDerHeyden (eds.), *Handbook of response to intervention: The science and practice of assessment and intervention* (pp. 331-342). New York, NY: Springer.
- Carbo, M. (2010). *What every principal should know about teaching reading: How to raise test scores and nurture a love of reading*. Syosset, NY: National Reading Styles Institute.
- Carter, P. L., & Welner, K. G. (2013). *Closing the opportunity gap: What America must do to give every child an even chance*. New York, NY: Oxford University Press.
- Christ, T. J., Zopluoglu, C., Long, J. D., & Monaghan, B. D. (2012). Curriculum-based measurement of oral reading: Quality of progress monitoring outcomes. *Exceptional Children*, 78(3), 356-373.
- Chudowsky, N., Chudowsky, V., & Kober, N. (2009). *State test score trends through 2007-08, Part 4: Has progress been made in raising achievement for students with disabilities?* Center on Education Policy, March 2015. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED509022>
- Clark, R., & Estes, F. (2008). *Turning research into results: A guide to selecting the right performance solutions*. Atlanta, GA: CEP Press.

- Coleman, M. R., Buysse, V., & Neitzel, J. (2006). *Recognition and response: An early intervening system for young children at risk for learning disabilities*. Chapel Hill, NC: University of North Carolina at Chapel Hill, FPG Child Development Institute.
- Colorado Department of Education. (2015). *Colorado standards*. Retrieved from <http://www.cde.state.co.us/standardsandinstruction/coloradostandards>
- Colorado Department of Education. (2016). *Writing standards-aligned Individualized Education Programs (IEPs): A supplemental guidance document for designing effective formal educational plans*. Retrieved from [http://www.cde.state.co.us/cdesped/guidance\\_ieps](http://www.cde.state.co.us/cdesped/guidance_ieps)
- Conte, K. L., & Hintze, J. M. (2000). The effects of performance feedback and goal setting on oral reading fluency within curriculum-based measurement. *Assessment for effective intervention, 25*(2), 85-98.
- Cortiella, C., & Horowitz, S. H. (2014). *The state of learning disabilities: Facts, trends and emerging issues*. New York, NY: National Center for Learning Disabilities.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage Publications.
- Creswell J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. Los Angeles, CA: SAGE Publications.
- Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: SAGE Publications.
- Creswell, J. W., & Plano-Clark, V. L. (2011). *Designing and conducting mixed methods research* (Vol. 2). Los Angeles, CA: Sage.

- Cronin, J., Dahlin, M., Xiang, Y., & McCahon, D. (2009). The accountability illusion. Northwest Accountability Association.
- Crotty, J. (1998). *The foundations of social research: Meaning and perspective in the research process*. London, England: Sage.
- Curran, K., & Reivich, K. (2011). Goal setting and hope. *Communiqué*, 39(7), 1.
- Darling-Hammond, L. (1994). *Professional development schools: Schools for developing a profession*. New York, NY: Teachers College Press.
- De Valenzuela, J. S., Copeland, S. R., Qi, C. H., & Park M. (2006). Examining educational equity: Revisiting the disproportionate representation of minority students in special education. *Exceptional Children*, 72, 425-441.
- Drasgow, E., Yell, M. L., & Robinson, T. R. (2001). Developing legally correct and educationally appropriate IEPs. *Remedial and Special Education*, 22(6), 359-373.
- DuFour, R., DuFour, R., Eaker, R., & Many, T. (2010). *Learning by doing: A handbook for professional learning communities at work* (2nd ed.). Bloomington, IN: Solution Tree
- DuFour, R., DuFour, R., Eaker, R., & Many, T. (2006). *Learning by Doing: A handbook for professional learning communities at work*. Bloomington, IN: Solution Tree.
- Duhon, G. J., Mesmer, E. M., Atkins, M. E., Greguson, L. A., & Olinger, E. S. (2009). Quantifying intervention intensity: A systematic approach to evaluating student response to increasing intervention frequency. *Journal of Behavioral Education*, 18, 101-118.
- Edsource. (2004). *No Child Left Behind in California? The Impact of the Federal NCLB Act so far*. Retrieved from [www.edsource.org](http://www.edsource.org)

- Finn, C. E., Jr, Rotherham, A. J., Hokanson, C. R., Thomas B. Fordham Foundation, & Progressive Policy Institute. (2001). *Rethinking special education for a new century*. Washington, DC: Thomas B. Fordham Foundation.
- Fletcher, J. M., Lyon, G. R., Fuchs, L. S., & Barnes, M. A. (2007). *Learning disabilities: From identification to intervention*. New York, NY: The Guilford Press.
- Fuchs, D., & Fuchs L. S., (2005). Responsiveness to Intervention: A blueprint for practitioners, policymakers, and parents. *Teaching Exceptional Children*, 38(1), 57.
- Fuchs, D., & Fuchs, L. S. (2006). Introduction to responsiveness-to-intervention: What, why, and how valid is it? *Reading Research Quarterly*, 4, 93-99.
- Fuchs, D., Fuchs, L. S., & Compton, D. L. (2012). Smart RTI: A next-generation approach to multilevel prevention. *Exceptional Children*, 78, 263-279.
- Fuchs, D., Fuchs, L., & Stecker, P. (2010). The "blurring" of special education in a new continuum of general education placements and services. *Exceptional Children*, 76(3), 301-323.
- Fuchs, D., Mock, D., Morgan, P. L., & Young, C. L. (2003). Responsiveness-to-intervention: Definitions, evidence, and implications for the learning disabilities construct. *Learning Disabilities Research and Practice*, 18(3), 157-171.
- Fuchs, L. S., & Stecker, P. M. (2003). *Scientifically based progress monitoring*. National Center on Student Progress Monitoring: Washington, DC. Retrieved May 15, 2016.
- <http://www.studentprogress.org/library/Presentations/ScientificallyBasedProgressMonitoring.pdf>

- Fuchs, L. S., Douglas, F., Powell, S. R., Seethaler, P. M., Cirino, P. T., & Fletcher, J. M. (2008). Intensive intervention for students with mathematics disabilities: Seven principles of effective practice. *Learning Disability Quarterly, 31*(2), 79-92.  
Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC25470801>
- Fuchs, L. S., & Fuchs, D. (2003). Can diagnostic assessment enhance general educators' instructional differentiation and student learning? In B. Foorman (Ed.), *Preventing and remediating reading difficulties: Bringing science to scale* (pp. 325-351). Baltimore, MD: York Press.
- Fuchs, L. S., Fuchs, D., Hamlett, C. L., Walz, L., & Germann, G. (1993). Formative evaluation of academic progress: How much growth can we expect? *School Psychology Review, 22*, 27-27.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2007). Collecting research data with questionnaires and interviews. *Educational research: An introduction, 227-261*.
- Gersten, R., & Dimino, J. A. (2006). RTI (Response to Intervention): Rethinking special education for students with reading difficulties (yet again). *Reading Research Quarterly, 41*(1), 99-108.
- Gersten, R., Schiller, E. P., & Vaughn, S. R. (Eds.). (2000). *Contemporary special education research: Syntheses of the knowledge base on critical instructional issues*. Mahwah, N.J: L. Erlbaum Associates.
- Giroux, H. A., & Schmidt, M. (2004). Closing the achievement gap: A metaphor for children left behind. *Journal of Educational Change, 5*(3), 213-228.

- Good, R. H., Gruba, J., & Kaminski, R. A. (2002). *Best Practices in Using Dynamic Indicators of Basic Early Literacy Skills (DIBELS) in an Outcomes-Driven Model*. Washington, DC: National Association of School Psychologists.
- Graner, P. S., Faggella-Luby, M. N., & Fritschmann, N. S. (2005). An overview of responsiveness to intervention: What practitioners ought to know. *Topics in Language Disorders, 25*, 93-105.
- Gresham, F. (2009). Using response to intervention for identification of specific learning disabilities. In A. Akin-Little, S. G. Little, M. A. Bray, & T. J. Kehle (Eds.), *Behavioral intervention in schools: Evidence-based positive strategies* (pp. 205-220). Washington, DC: American Psychological Association.
- Hallahan, D. P., & Mercer, C. (2002). Learning disabilities: Historical perspective. In R. Bradley, L. Danielson, & D. P. Hallahan, (Eds.), *Identification in learning disabilities: Research to practice* (pp. 1-65). Mahwah, NJ: Erlbaum.
- Harris, D., & Herrington, C. (2006). Accountability, standards and the growing achievement gap: Lessons from the past half-century. *American Journal of Education, 112*, 209-238.
- Harr-Robins, J., Song, M., Hurlburt, S., Pruce, C., Danielson, L., Garet, M., & Taylor, J. (2012). *The inclusion of students with disabilities in school accountability systems*. Interim Report. NCEE 2012-4056. *National Center for Education Evaluation and Regional Assistance*.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York, NY: Routledge.

- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of educational research, 77*(1), 81-112.
- Haycock, K. (1998). *Dispelling the myth*. Washington, D.C.: The Education Trust
- Haycock, K. (2001). Closing the achievement gap: helping all students achieve. *ASCD, 58*(6).
- Hughes, C. A., & Dexter, D. D. (2011). Using RTI in identifying students with learning disabilities. RTI Action Network, National Center for Learning Disabilities.
- Hursh, D. (2007). Exacerbating inequality: the failed promise of the No Child Left Behind Act. *Race, Ethnicity & Education, 10*(3), 295-308.
- Individuals with Disabilities Education Act (IDEIA), 20 U.S.C. (2004).
- Jenkins, A., & Yoshimura, J. (2010). Not another inservice! Meeting the special education professional development needs of elementary general educators. *Teaching Exceptional Children, 42*(5), 36-44.
- Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology, 80*, 437-447.
- Kaufman, A. S., Lichtenberger, E. O., Fletcher-Janzen, E., & Kaufman, N. L. (2005). *Essentials of KABC-II assessment* (Vol. 94). New York, NY: John Wiley & Sons.
- Kavale, K. A., Holdnack, J. A., & Mostert, M. P. (2005). Responsiveness to intervention and the identification of specific learning disability: A critique and alternative proposal. *Learning Disability Quarterly, 28*, 2-16.
- Kober, N. (2001). *It takes more than testing: closing the achievement gap*. Washington, DC: Center on Education Policy, 21-25.

- Kratochwill, T. R. (2008). Best practices in school-based problem-solving consultation: Applications in prevention and intervention systems. *Best practices in school psychology V*, 1673-1688.
- LaRocque, M. (2007). Closing the achievement gap: The experience of a middle school. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 80(4), 157-162.
- Lauen, D. L., & Gaddis, S. M. (2012). Accountability pressure, academic standards, and educational triage. *Educational Evaluation and Policy Analysis*, 38(1), 127
- Learning Disabilities Association of America (LDA). (2010). *The Learning Disabilities Association of America's white paper on evaluation, identification, and eligibility criteria for students with specific learning disabilities*. Pittsburgh, PA: Author.
- Lee, J. (2002). Racial and ethnic achievement gap trends: Reversing the progress toward equity? *Educational Researcher*, 31(1), 3-12.
- Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School psychology quarterly*, 22(4), 557.
- Lignugaris-Kraft, B., Marchand-Martella, K. N., & Martella, R. C. (2006). Writing better goals and short-term objectives or benchmarks. *Teaching Exceptional Children*, 34(1), 52-59.
- Lonigan, C. J., & Whitehurst, G. J. (2001). Getting reading to read: Emergent literacy and family literacy. In B. H. Wasik (Ed.), *Synthesis of research on family literacy programs* (pp. 1-41). Chapel Hill, NC: University of North Carolina.
- Mantel, B. (2005). Is the law improving student performance? [Abstract]. *CQ Researcher*, 15, 469-488.



- Marshall, C., & Rossman, G. B. (2011). Managing, analyzing, and interpreting data. C. *Marshall & GB Rossman, Designing Qualitative Research, 5, 205-227.*
- Marshall, M. N. (1996). Sampling for qualitative research. *Family practice, 13(6), 522-526.*
- Marston, D. (2005). Tiers of intervention in responsiveness to intervention: Prevention outcomes and learning disabilities identification patterns. *Journal of Learning Disabilities, 38, 539-544.*
- Marston, D., Muyskens, P., Lau, M., & Canter, A. (2003). Problem-solving model for decision making with high-incidence disabilities: The Minneapolis experience. *Learning Disabilities Research and Practice, 18(3), 187-200.*
- Martin, J. L. (n.d.). *Legal implications of Response to Intervention and special education identification.* Retrieved from RTI Action Network Website:  
<http://www.rtinetwork.org/learn/ld/legal-implications-of-response-to-intervention-and-special-education-identification>
- Marzano, R. (2003). What works in schools: Translating research into action. Alexandria, VA: Association for Supervision and Curriculum Development.
- Marzano, R., & Waters, T. (2009). *District leadership that works: Striking the right balance.* Bloomington, IN: Solution Tree Press.
- Mason, M. (2010, August). Sample size and saturation in Ph.D. studies using qualitative interviews. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research, 11, 3.* Retrieved from [http://www.qualitative-research.net/index.php/fqs/article/view/1428/3027.%20%20%20%20%5BAccesse d](http://www.qualitative-research.net/index.php/fqs/article/view/1428/3027.%20%20%20%20%5BAccesse%20d)

- Mastropieri, M. A., & Scruggs, T.E. (2005). Feasibility and consequences of response to intervention: Examination of the issues and specific evidence as a model for the identification of individuals with learning disabilities. *Journal of Learning Disabilities, 38*, 525-531.
- Mather, N., & Kaufman, N. (2006). Introduction to the special issue, Part two: It's about the what, the how well, and the why. *Psychology in the Schools, 43*(8), 829-834. doi:10.1002/pits.20199
- McDonnell, L. (2005). No Child Left Behind and the federal role in education: Evolution or Revolution? *Peabody Journal of Education, 80*(2), 19-38.
- McLaughlin, M., & Thurlow, M. (2003). Education accountability and students with disabilities: Issues and challenges. *Educational Policy, 17*(4), 431-451.
- Mellard, D., Byrd, E., Johnson, J., Tollefson, M., & Boesche, L. (2004). Foundations and research on identifying model responsiveness-to-intervention sites. *Learning Disability Quarterly 27*(4), 243-56.
- Mellard, D. F., McKnight, M., & Woods, K. (2009). Response to intervention screening and progress-monitoring practices in 41 local schools. *Learning Disabilities Research & Practice, 24*(4), 186-195. doi:10.1111/j.1540-5826.2009.00292
- Merriam, S. B. (1998). *Qualitative research and case study applications in education: Revised and expanded from case study research in education*. San Francisco, CA: Jossey-Bass Publishers.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education: Revised and expanded from case study research in education*. San Francisco, CA: Jossey-Bass Publishers.

- Merriam, S. B. (2009). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.
- Miller, T., Birch, M., Mauthner, M., & Jessop, J. (Eds.). (2012). *Ethics in qualitative research*. London, England: Sage.
- National Education Association. (2015). *Identifying factors that contribute to achievement gaps*. Retrieved from <http://www.nea.org/home/17413.htm>
- National Research Council on Learning Disabilities (NRCLD). (2006). *Integrating RtI within the SLD determination process*. National SEA Conference on SLD.
- NICHCY. (2013). *Contents of the IEP*. Retrieved from <http://nichcy.org/schoolage/iep/iepcontents>
- Nisbett, R. E. (1995). *Race, genetics, and IQ*. Retrieved from <http://wwwpersonal.umich.edu/~nisbett/racegen.pdf>
- No Child Left Behind Act of 2001, 107-110 (2001).
- Odden, A. (2009). *10 strategies for doubling student performance*. Thousand Oaks, CA: Corwin Press.
- Odden, A., & Archibald, S. (2009). *Doubling student performance: . . . and finding the resources to do it*. Thousand Oaks, CA: Corwin Press.
- Orosco, M. J., & Klingner, J. (2010). One school's implementation of RTI with English language learners: "Referring into RTI." *Journal of Learning Disabilities*, 43(3), 269-288.
- Patterson, J. T., & Freehling, W. W. (2001). *Brown v. Board of Education: A civil rights milestone and its troubled legacy*. Oxford, NY: Oxford University Press.

- Peske, H. G., & Haycock, K. (2006). Teaching inequality: How poor and minority students are shortchanged on teacher quality: A report and recommendations by the education trust. *Education Trust*.
- Petursdottir, A. G. (2006). Brief experimental analysis of early reading interventions. *Dissertation Abstract International*, 67(08A), 269-2884.
- Pintrich, P. R., & Schunk, D. H. (2002). *Motivation in education: Theory, research, and Applications* (2nd Ed.). Columbus, OH: Merrill-Prentice Hall.
- Plano Clark, V. L., & Creswell, J. W. (2008). *The mixed methods reader*. Thousand Oaks, CA: Sage Publications.
- Reschly, D. J. (2005). Learning disabilities identification: Primary intervention, secondary intervention, and then what? *Journal of Learning Disabilities*, 38(6), 510-515.
- Restori, A., Gresham, F., & Cook, C. (2008). Old habits die hard: Past and current issues pertaining to Response to Intervention. *The California School Psychologist* 13, 67-75.
- Reynolds, C. R. (1984). Critical measurement issues in learning disabilities. *Journal of Special Education*, 18, 451-476.
- Sanders, W.L., & Rivers, J.C. (1996). Cumulative and residual effects of teachers on future student academic achievement. Research Progress Report. Knoxville: University of Tennessee Value-Added Research and Assessment Center.

- Schatschneider, C., Wagner, R. K., & Crawford, E. C. (2008). The importance of measuring growth in response to intervention models: Testing a core assumption. *Learning & Individual Differences, 18*(3), 308-315. doi:10.1016/j.lindif.2008.04.005
- Schultz, E. K., & Stephens, T. (2009a). SLD Identification: An analysis of state policies. *Academic Exchange Quarterly, 13*, 29-35.
- Schwandt, T. A. (1997). *Qualitative inquiry: A dictionary of terms*. Thousand Oaks, CA: SAGE Publications.
- Schwandt, T. A. (2007). *The Sage dictionary of qualitative inquiry* (3rd ed.). Los Angeles, CA: Sage publications.
- Scott, G. (2012). K-12 education: Selected states and school districts cited numerous federal requirements as burdensome, while recognizing some benefits. Report to Congressional Requesters. GAO-12-672. U.S. Government Accountability Office.
- Scruggs, T. (2003). *Alternatives to RtI in the assessment of learning disabilities*. Paper presented at National Research Center on Learning Disabilities Symposium, Kansas City, MO.
- Shinn, M. M., & Shinn, M. R. (2002). AIMSweb training workbook: Administration and scoring of reading curriculum-based measurement (R-CBM) for use in general outcome measurement. *Eden Prairie, MN: Edformation*.
- Shapiro, L. (2008). Best practices in setting progress monitoring goals for academic skill improvement. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology V*. Bethesda, MD: National Association of School Psychologists.

- Shinn, M. R. (2006). Identifying students at risk, monitoring performance, and determining eligibility within response to intervention: Research on educational need and benefit from academic intervention. *School Psychology Review, 36*(4), 601-617.
- Shinn, M. R., Good, R. H., & Stein, S. (1989). Summarizing trend in student achievement: A comparison of methods. *School Psychology Review*.
- Shinn, M. R., Shinn, M. M., & Langell, L. A. (2008). *Overview of curriculum-based measurement (CBM) and AIMSweb®*. Retrieved from [www.aimsweb.com/uploads/files/11\\_OverviewofCBM008072008.ppt](http://www.aimsweb.com/uploads/files/11_OverviewofCBM008072008.ppt)
- Shute, V. J. (2006). *Assessments for learning: Great idea, but do they work?* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Skiba, R., Simmons, S., Ritter, M., Gibb, A., Rausch, M., Cuadrado, G., & Chung, C. (2008). Achieving equity in special education: History, status, and current challenges. *Exceptional Children, 74*(3), 264-288.
- Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Speece, D., & Case, L. (2001). Classification in context: An alternative approach to identifying early reading disability. *Journal of Educational Psychology, 93*(4), 735-49. doi:10.1037/0022-0663.93.4.735
- Speece, D. L., Case, L.P., & Molloy, D. E. (2003). Responsiveness to general education instruction as the first gate to learning disabilities identification. *Learning Disabilities Research & Practice, 18*(3), 147-156.

- Speziale, H. S., & Carpenter, D. R. (2007). *Qualitative research in nursing: Advancing the humanistic imperative*. Philadelphia, PA: Lippincott Williams & Wilkins.
- Stiggins, R., & DuFour, R. (2009). Maximizing the power of formative assessments. *Phi Delta Kappan*, 90(9), 640-644.
- Supovitz, J., & Turner, H. (2000). The effects of professional development on science teaching practices and classroom culture. *Journal of Research in Science Teaching*, 37(9), 963-980.
- Turnbull, H. R., Turnbull, A. P., Wehmeyer, M. L., & Park, J. (2003). A quality of life framework for special education outcomes. *Remedial and Special Education*, 24(2), 67-74.
- U.S. Department of Education. (2008). *Nation's report card*. Retrieved from <http://www2.ed.gov/rschstat/landing.jhtml>
- U.S. Department of Education. (2011). *Building the legacy: IDEA 2004*. Retrieved from <http://idea.ed.gov/explore/home>
- U.S. Department of Education, National Center for Education Statistics. (2013). *Digest of Education Statistics, 2012* (NCES 2014-015)
- VanDerHeyden, A. M., & Witt, J. C. (2005). Quantifying context in assessment: Capturing the effect of base rates on teacher referral and a problem-solving model of identification. *School Psychology Review*, 34(2), 161-183.
- Vaughn, S., & Fuchs, L. S. (2003). Redefining learning disabilities as inadequate response to instruction: The promise and potential problems. *Learning Disabilities Research and Practice*, 18(3), 137-146.

- Vaughn, S., Linan-Thompson, S., & Hickman, P. (2003). Response to instruction as a means of identifying students with reading/learning disabilities. *Exceptional Children, 69*(4), 391-409.
- Webb, M. A. (2007). *The functional outcomes of curriculum-based measurement and its relation to high-stakes testing* (Doctoral dissertation). Ann Arbor, MI: Proquest.
- Wei, R., Darling-Hammond, L., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession*. Stanford, CA: School Redesign Network, Stanford University.
- Welner, K. G., & Carter, P. L. (2013). Achievement gaps arise from opportunity gaps. *Closing the opportunity gap: What America must do to give every child an even chance, 169-180*.
- White, S., & Clement, J. (2001). Assessing the Lexile Framework: Results of a Panel Meeting. Working Paper No. 2001-08. *National Center for Education Statistics*.
- Wiener, R. M., & Soodak, L. C. (2008). Special education administrators' perspectives on response to intervention. *Journal of Special Education Leadership, 21*(1), 39-45.
- Williams, T., Kirst, M., & Haertel, E. (2005). *Similar students, differing results: Why do some schools do better? A large-scale survey of California elementary schools serving low-income students*. Mountain View, CA: EdSource.
- Woodcock, R. W., & Mather, N. (2000). *Woodcock Johnson Psycho-Educational Battery-III*. Itasca, IL: Riverside.



- Yell, M. L., & Stecker, P. M. (2003). Developing legally correct and educationally meaningful IEPs using curriculum-based measurement. *Assessment for Effective Intervention, 28*(3-4), 73-88. doi:10.1177/073724770302800308
- Yin, R. K. (2003). *Case study research: Design and methods* (2nd ed.). Thousand Oaks, CA: Sage
- Zhao, Y., & Tienken, C. H. (2013). How common standards and standardized testing widen the opportunity gap. *Closing the opportunity gap: What America must do to give every child an even chance*, 111-122.

**APPENDIX A**  
**INDIVIDUALIZED EDUCATION PROGRAM (IEP)**

October: 9 correct 11th percentile

November: 14 correct 31st percentile

December: 16 correct 40th percentile

DRP (Comprehension): 48/4.6

TOSCRF A: 3.7

TOSCRF B: 4.2

#### Student Needs and Impact of Disability

How does the student's disability affect her involvement and progress in the general curriculum and participation in appropriate activities?

IDEA 300.324(a)(ii) concerns of parent

IDEA 300.324(a)(iv) communication needs

IDEA 300.320(a)(1)(i) How the child's disability affects the child's involvement and progress—in the general curriculum and participation in appropriate activities

learning disability impacts her ability to meet grade level expectations in reading fluency and reading comprehension. inability to stay organized also affects her progress in the general education classroom setting.

#### Parent/Student Input

IDEA 300.324(a)(1)(ii) concerns of parent

#### CONSIDERATION OF SPECIAL FACTORS

The student does not exhibit behavior that requires a Behavior Intervention Plan. 300.324(1)(2)(i)

The student is not deaf-blind. 300.324(1)(2)(iii) & 300.324(a)(2)(iv)

The student is not deaf or hard of hearing. 300.324(a)(2)(iv)

The student is not blind or visually impaired. 300.324(1)(2)(iii)

The student does not require a Health Care Plan.

The student does not have Limited English Proficiency. 300.324(a)(2)(ii)

The student does not need Assistive Technology devices or services. 300.324(a)(2)(v)

The student does not require Special Transportation. 300.34 Related Services (a); 300.34 (c)(16); 300.107(b)

#### ANNUAL GOALS IDEA 300.320(a)(2)(i)

Progress Report (Describe how parents will be informed of Taylor's progress towards goals and how frequently this will occur.) IDEA 300.321(a)(3)(iii)

Parents will be informed of Taylor's progress via parent/teacher conferences and/or progress notes that accompany report cards.

#### Goal 1

Area of Need: Reading

Projected Achievement Date: 1/13/2015

ESY: No

**Unit of Measurement:** correct words read per minute on a reading fluency probe

**Baseline Data Point:** 112 correct words per minute 55th percentile

**Evaluation Method:** Monitor and Chart Progress

**Measurable Goal:**

By January 13th 2015, when given a 4th grade oral reading fluency passage, [redacted] will read 128 correct words per minute (40th percentile) in 3 out of 3 opportunities, while working towards the 6th grade level.

**Standards:**

- 2 Reading for All Purposes // 3 Word meanings are determined by how they are designed and how they are used in context // Evidence Outcomes // c Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

**Goal 2**

**Area of Need:** Reading

**Projected Achievement Date:** 1/13/2015

**ESY:** No

**Unit of Measurement:** correct score on a reading comprehension probe

**Baseline Data Point:** 16 correct 40th percentile

**Evaluation Method:** Monitor and Chart Progress

**Measurable Goal:**

By January 13, 2105, [redacted] will earn a score of 24 (40th percentile) on a 5th grade reading comprehension probe, in 3 out of 3 opportunities, while working towards the 6th grade proficiency level.

**Standards:**

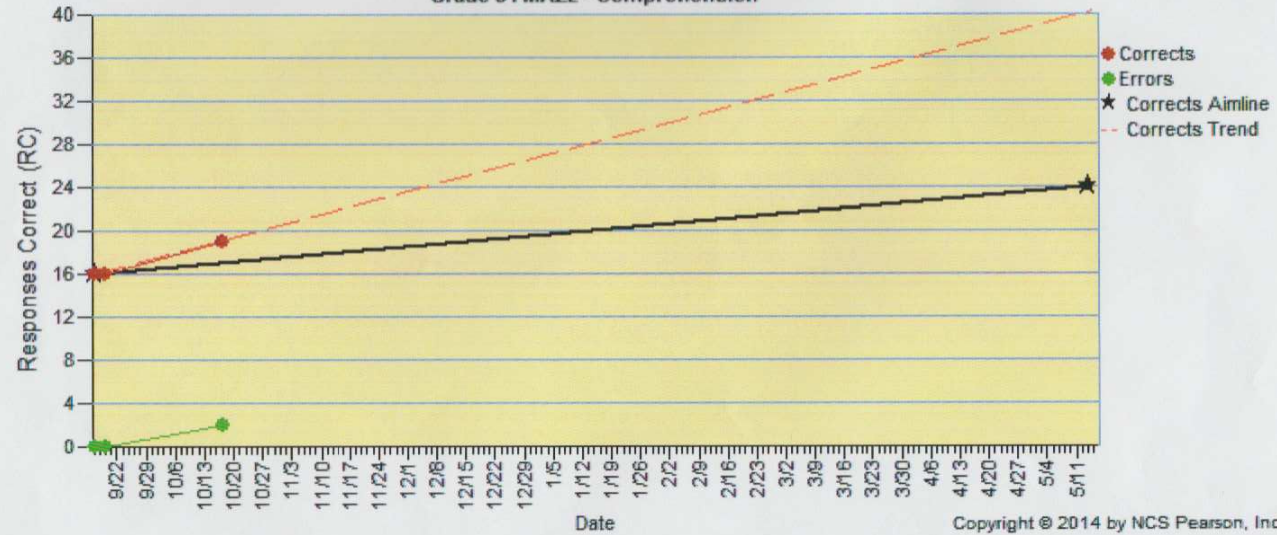
- 3 Word meanings are determined by how they are designed and how they are used in context // Evidence Outcomes // a Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies. // i Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
- 2 Reading for All Purposes // 3 Word meanings are determined by how they are designed and how they are used in context // Evidence Outcomes // c Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.



Weld RE-4 School District  
Year: 2014-2015

Progress Monitoring Improvement Report for Taylor Harris-Aragon

Grade 5 : MAZE - Comprehension



**Progress Monitoring Improvement Report**  
from 09/16/2014 to 05/14/2015

**Goal Statement**

In 34.3 weeks, [redacted] will achieve 24 Responses Correct with 0 Errors from grade 5 MAZE - Comprehension. The rate of improvement should be 0.24 Responses Correct per week. The current average rate of improvement is 0.72 Responses Correct per week.

*44th%*

Date	09/16	09/18	10/16										
Corrects	16	16	19										
Errors	0	0	2										
Goal/Trend ROI	0.24/ 0.72												

Grey data points are baseline/goals sessions.  
Yellow data points have corresponding program interventions.  
M represents missed scheduled dates.

**Goal Changes & Intervention Descriptions:**

*target is at 40th%*

9/16/2014 - (Baseline Corrects = 16 : Goal Corrects = 24)

Grey entries are baseline sessions or goal changes.  
Yellow entries have corresponding program interventions.

*goal from Baseline to target is = @ 40th%*



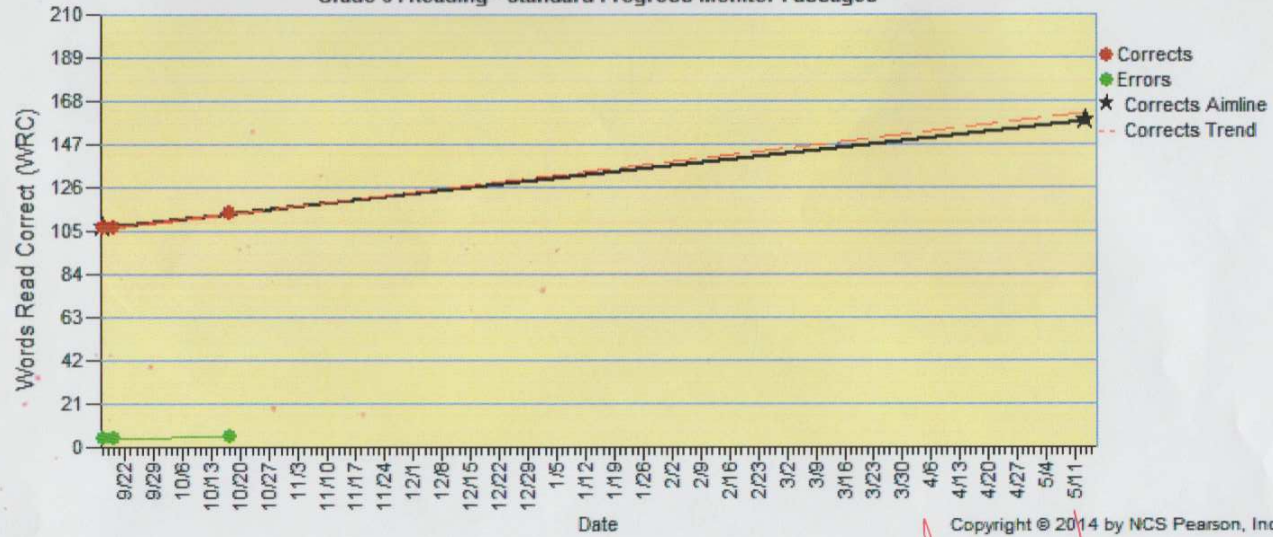


AIMSweb®

Weld RE-4 School District  
Year: 2014-2015

Progress Monitoring Improvement Report for Taylor Harris-Aragon  
from 09/16/2014 to 05/14/2015

Grade 6 : Reading - Standard Progress Monitor Passages



Copyright © 2014 by NCS Pearson, Inc.

*Good goal  
except not for  
current 6L  
though  
norms  
are same*

**APPENDIX B**  
**INDIVIDUALIZED EDUCATION PROGRAM**  
**(IEP) CODING RUBRIC**



**INDIVIDUALIZED EDUCATION PROGRAM (IEP) CODING RUBRIC**

Student ID	Grade level	IEP Date	Term (Spring, Fall, Winter)	Type of goal (RC/ Fluency)	Current goal score/ percentile score	Current Percentile	Meet/ above/ under 40 <sup>th</sup> percentile	Current ROI	Meet/ above/ under ROI	Measurable Yes-No	Gap closing Yes-No	Note

**APPENDIX C**

**AIMSweb NATIONAL NORMS TABLE**



Weld RE-4 School District  
Year: 2014-2015

AIMSweb® National Norms Table  
MAZE - Comprehension

*Cell*

Grade	%ile	Fall		Winter		Spring		Group ROI
		Num	RC	Num	RC	Num	RC	
6	99	11690	51	11690	51	11690	51	0.00
	98		45		50		0.14	
	97		44		49		0.14	
	96		42		48		48	0.17
	95		40		47		47	0.19
	94		39		46		47	0.22
	93		38		45		46	0.22
	92		37		45		46	0.25
	91		36		44		45	0.25
	90		36		43		44	0.22
	89		35		42		43	0.22
	88		34		42		43	0.25
	87		34		41		42	0.22
	86		33		41		41	0.22
	85		32		40		41	0.25
	84		32		39		40	0.22
	83		31		39		39	0.22
	82		31		38		39	0.22
	81		31		38		38	0.19
	80		30		38		38	0.22
	79		30		37		37	0.19
	78		29		37		37	0.22
	77		29		36		36	0.19
	76		29		36		36	0.19
	75		28		35		35	0.19
	74		28		35		35	0.19
	73		28		35		35	0.19
	72		27		34		34	0.19
	71		27		34		34	0.19
	70		27		34		34	0.19
	69		27		33		33	0.17
	68		26		33		33	0.19
67	26	33	32	0.17				
66	26	33	32	0.17				
65	26	32	32	0.17				

Num = Number of Students RC = Responses Correct ROI = Rate Of Improvement  
ROI is Spring Score minus Fall Score (or Winter minus Fall) divided by 36 weeks (or 18 weeks).

Grade	%ile	Fall		Winter		Spring		Group ROI
		Num	RC	Num	RC	Num	RC	
6	29	11690	17	11690	23	11690	23	0.17
	28		17		23		23	0.17
	27		16		23		22	0.17
	26		16		23		22	0.17
	25		16		22		22	0.17
	24		16		22		21	0.14
	23		15		22		21	0.17
	22		15		22		21	0.17
	21		15		21		21	0.17
	20		15		21		20	0.14
	19		14		21		20	0.17
	18		14		20		20	0.17
	17		14		20		19	0.14
	16		13		19		19	0.17
	15		13		19		18	0.14
	14		12		19		18	0.17
	13		12		18		17	0.14
	12		12		18		17	0.14
	11		11		17		17	0.17
	10		11		17		16	0.14
	9		10		16		15	0.14
	8		10		16		15	0.14
	7		10		15		14	0.11
	6		9		14		14	0.14
	5		8		13		13	0.14
	4		8		12		12	0.11
	3		7		11		11	0.11
	2		6		9		10	0.11
	1		4		7		9	0.14
<b>Mean</b>			22	29	29	0.19		
<b>StdDev</b>			9	10	10	0.03		

Num = Number of Students RC = Responses Correct ROI = Rate Of Improvement  
 ROI is Spring Score minus Fall Score (or Winter minus Fall) divided by 36 weeks (or 18 weeks).

User norms will be used when national norms are unavailable.

Grade	%ile	Fall		Winter		Spring		Group ROI
		Num	RC	Num	RC	Num	RC	
6	64	11690	25	11690	32	32	0.19	
	63		25		32	31	0.17	
	62		25		32	31	0.17	
	61		24		31	31	0.19	
	60		24		31	31	0.19	
	59		24		31	30	0.17	
	58		24		31	30	0.17	
	57		23		30	30	0.19	
	56		23		30	30	0.19	
	55		23		30	29	0.17	
	54		23		30	29	0.17	
	53		23		29	29	0.17	
	52		22		29	29	0.19	
	51		22		29	29	0.19	
	50		22		29	28	0.17	
	49		22		28	28	0.17	
	48		22		28	28	0.17	
	47		21		28	28	0.19	
	46		21		28	27	0.17	
	45		21		27	27	0.17	
	44		21		27	27	0.17	
	43		20		27	27	0.19	
	42		20		27	26	0.17	
	41		20		26	26	0.17	
	40		20		26	26	0.17	
	39		19		26	26	0.19	
	38		19		26	25	0.17	
	37		19		25	25	0.17	
	36		19		25	25	0.17	
	35		18		25	25	0.19	
34	18	25	24	0.17				
33	18	24	24	0.17				
32	18	24	24	0.17				
31	17	24	23	0.17				
30	17	24	23	0.17				

Num = Number of Students RC = Responses Correct ROI = Rate Of Improvement  
 ROI is Spring Score minus Fall Score (or Winter minus Fall) divided by 36 weeks (or 18 weeks).

**APPENDIX D**  
**AN INTERVIEW GUIDE**

## AN INTERVIEW GUIDE

1. How do you make decisions about writing goals for students with learning disability? What processes do you use to determine a student's reading needs and related goals?
2. Tell me more specifically, what kind of data do you collect for baseline? How do you use baseline data?
3. Do you use grade-level AIMSweb expectations when setting reading goals? If yes, how?
4. What does progress look like to you? How do you measure progress? How do you know if it is adequate or inadequate progress (Rate Of Improvement)?
5. Tell me about the training that you receive regarding using AIMSweb data and establishing reading goals?
6. How does this training impact their future goal setting activities?

Do you want to add any information?

**APPENDIX E**  
**INFORMED CONSENT FORM**



UNIVERSITY of  
NORTHERN COLORADO



**INFORMED CONSENT FORM FOR  
HUMAN PARTICIPANTS IN RESEARCH**

Project Title: Mind the Gap: Using Data-Driven Decision Making to Develop Smarter Goals: A Sequential Explanatory Mixed-Method Research

Primary Researcher: Shehana Alqafari, School of Special Education  
University of Northern Colorado  
(xxx) xxx-xxxx, [alqa9066@bears.unco.edu](mailto:alqa9066@bears.unco.edu)

Research Advisor: Dr. Rashida Banerjee, School of Special Education  
University of Northern Colorado  
(970) 351-1184, [rashida.banerjee@unco.edu](mailto:rashida.banerjee@unco.edu)

My name is Shehana Alqafari and I am a doctoral student from the University of Northern Colorado in Greeley, Colorado. I am conducting a study into how special education teachers use data-driven decision making in the development of IEP goals for students with learning disabilities.

I am interested in hearing about your experiences in developing goals in the content area of reading, and how you use different sources of data to determine which goals are appropriate for each student.

I would like to invite you to participate in a focus group discussion about using data-driven decision making. The focus group discussion will last approximately 90 minutes, and will be audio recorded so that I can transcribe the discussion. You will be provided with the opportunity to review the themes from this discussion and statements made, as well as provide further comments if you want to add more.

All information that is gathered from interviews and observations will be held in strict confidence. No identifying information will be used in this study. Your confidentiality will be protected by using pseudonyms; no identifying information will be shared with others. Results from the study will be available to you upon your request when it has been completed. The risk or discomfort involved in participating in this research study is minimal, no more than would be considered normal for a professional conversation between colleagues. Some individuals may become slightly nervous when being observed, however, since there is no evaluation of performance, this risk is minimal. The

benefits of participating in this study include receiving a small token of appreciation from the researcher.

If you would like to know more about the project, please contact either me or my research advisor, Dr. Rashida Banerjee at the address listed above.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

I consent to participate in this study:

---

Please print your name

---

Participant's Signature

Your signature indicates consent to audiotape interviews. The audio recording will not be heard or viewed by any other party except by the primary researcher (me).

---

Date

---

Researcher's Signature

---

Date

**APPENDIX F**  
**INSTITUTIONAL REVIEW BOARD APPROVAL**



UNIVERSITY OF  
NORTHERN COLORADO

*Institutional Review Board*

DATE: November 4, 2015

TO: Shehana Alqafari  
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [803533-2] Mind the Gap: Examination of Elementary Students' IEP Goals.  
SUBMISSION TYPE: Amendment/Modification

ACTION: APPROVED  
APPROVAL DATE: November 4, 2015  
EXPIRATION DATE: November 4, 2016  
REVIEW TYPE: Expedited Review

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB has APPROVED your submission. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on applicable federal regulations.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of November 4, 2016.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

**Thank you for your patience with the UNC IRB process. The first reviewer, Dr. Lahman, has reviewed and approved your amendments and modifications. I have subsequently reviewed**