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LOYOLA UNIVERSITY CHICAGO

CORRECTIVE READING AND MIDDLE SCHOOL STUDENTS WITH SPECIFIC LEARNING DISABILITY

A DOCTORAL RESEARCH PROJECT SUBMITTED TO

THE FACULTY OF THE GRADUATE SCHOOL OF EDUCATION

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF EDUCATION

PROGRAM IN SCHOOL PSYCHOLOGY

BY

DIANE L. WALLENDJACK

CHICAGO, ILLINOIS

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Thank you to my mother, who encouraged me to apply for this doctoral program and provided many hours of phone-based support to make this degree an actuality. Thank you to my father, for proofreading numerous APA-formatted papers and providing valuable feedback, despite not understanding the many acronyms associated with the field of education. And finally, thank you to my soon-to-be-fiancé, who consistently reminded me that I needed to "just get it done!"

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ABSTRACT

The purpose of this research was to examine how much impact a two-trimester implementation of the *Corrective Reading Comprehension* program had upon the reading skills of special education students receiving instruction in small group special education English Language Arts classes. The goal was to gather data on the effectiveness of the *Corrective Reading Comprehension* program as an intervention for middle school students with specific learning disability, as measured by two different types of data, and supported by student and teacher acceptability measures. Data was collected over the course of the 2015-16 school year in order to answer the following four research questions: (1) To what extent does the *Corrective Reading Comprehension* program improve student reading growth as measured by weekly R-CBM progress monitoring data? (2) To what extent does the *Corrective Reading Comprehension* program improve student reading growth as measured by MAP Reading assessment data? (3) How acceptable was the *Corrective Reading Comprehension* program to students? (4) How acceptable was the *Corrective Reading Comprehension* program to teachers? The sample included 13 students eligible for special education services under the category of Specific Learning Disability in Reading. Participant results with regard to reading growth were somewhat mixed in that most students became better readers, yet did not measurably increase their reading comprehension skills. Discussion includes limitations of the study and suggestions for future research.

CHAPTER I

INTRODUCTION

Out of the six million four hundred thousand students in special education during the 2012-2013 school year, 35% were identified as having a 'specific learning disability' (National Center for Education Statistics, 2015). Of those students with an identified Specific Learning Disability (SLD), an estimated 80% have been placed in special education due to a lack of reading ability (U.S. Department of Education, Office of Special Education and Rehabilitative Services, 2002). Unfortunately, few students receiving special education services ever close the reading achievement gap that exists between them and their grade level peers (USDOE, OSERS, 2002). As Vaughn and Wanzek (2014) highlight, not only have students with identified reading disabilities made lower gains over time as compared to students without disabilities, but examination of reading achievement data from several databases has found a substantial lack of growth over time for students with disabilities, despite special education qualification. It is extremely troubling that the group of students explicitly identified as needing to make the most progress in reading is the same group showing the least amount of reading growth.

Research Problem Statement

Special education students being served in small group English Language Arts classes at a middle school in the western suburbs of Chicago have historically received a modified version of the core reading curriculum, lacking intensive programming

designed to remediate their individual reading skill deficits. The small group special education English Language Arts (ELA) classes occur on a daily basis for eighty minutes, and serve between eight and ten students per class at grades six, seven, and eight. Due to concerns presented regarding a lack of remedial reading skill teaching in these classes, the teachers of these classes have been trained to implement the *Corrective Reading* program. Instruction with the *Corrective Reading Comprehension* component will begin in each class on November 30, 2015 and will last until May 27, 2016. Special Education teachers are expected to implement the *Corrective Reading Comprehension* program in their ELA classes on a daily basis for forty of the eighty minutes; during the other forty minutes students will continue to receive a modified version of their grade level's core curriculum.

There are many factors that potentially support or detract from student reading success; teacher buy-in and student motivation to learn are two of these factors. When assessing the attitudes of teachers and students participating in *Corrective Reading,* McDaniel, Duchaine, and Jolivette (2010) found that teachers appreciated the comprehensive format and the scripted nature in addition to finding it easy to use, while students expressed an awareness of their own need for reading instruction and a desire to learn how to read better. From their research, McDaniel et al. suggest that understanding student's attitude toward a reading program may help the intervention to be more effective. For this reason, an acceptability measure will be utilized in order to gather information on the participants' feelings about the *Corrective Reading Comprehension* program.

The purpose of this research is to examine how much impact a two-trimester implementation of the *Corrective Reading Comprehension* program has upon the reading comprehension skills of special education students in small group ELA classes. Student progress will be measured by weekly progress monitoring data through the use of reading curriculum-based measurement (R-CBM) passages and the Measures of Academic Progress (MAP) benchmark assessments taken by students in September, December, and May. The outcomes of this research will contribute both to literature regarding implementation of the *Corrective Reading Comprehension* component at the middle school level, and to literature regarding models for providing special education eligible middle school students with intensive intervention in reading.

Research Questions

1. To what extent does the *Corrective Reading Comprehension* program improve student reading growth as measured by weekly R-CBM progress monitoring data?
2. To what extent does the *Corrective Reading Comprehension* program improve student reading growth as measured by MAP Reading assessment data?
3. How acceptable was the *Corrective Reading Comprehension* program to students?
4. How acceptable was the *Corrective Reading Comprehension* program to teachers?

CHAPTER II

REVIEW OF RELATED LITERATURE

Reading Difficulties Among Middle School Students

Whereas much recent reading research has focused on developing basic reading skills in beginning readers, less is known about building reading comprehension skills in struggling readers at the middle school level (Mariage et al., 2009). As referenced by Vaughn and Wanzek (2014), poor reading instruction is cumulative. When students with reading disabilities receive inadequate reading instruction in elementary school, they arrive in middle school and are expected to "read to learn" yet are unable to access the curriculum as they have never "learned to read" (Kim, Linan-Thompson & Misquitta, 2012, p. 66; Vaughn & Wanzek, 2014). Struggling secondary readers therefore require intensive small group reading instruction designed to address the critical elements of reading through explicit and systematic instruction, including frequent opportunities for practice and consistent teacher feedback (Vaughn & Wanzek, 2014). These specific instructional components are also included in the list of effective classroom and intervention practices for improving adolescent literacy. In a 2008 report on evidence-based strategies educators can use to improve adolescent literacy instruction, Kamil, Borman, Dole, Kral, Salinger, and Torgesen recommend the inclusion of explicit vocabulary instruction, direct and explicit comprehension strategy instruction, multiple opportunities for student discussion of text meaning, systems designed to increase student

motivation and engagement in literacy, and the provision of intense reading intervention by highly trained specialists.

Instruction for Secondary Students

After conducting a synthesis to determine the impact of various reading interventions on the reading comprehension outcomes of struggling secondary readers, Edmonds et al. (2009) found strong evidence that struggling secondary readers can improve reading comprehension when taught effective reading comprehension strategies. Edmonds et al. note that while their conclusion seems quite obvious, it is because these students are typically *not* provided effective reading comprehension instruction that the findings should be considered significant. In a 2012 synthesis, Kim et al. sought to build on the findings of Edmonds et al. (2009), and narrowed the scope of research to only students with learning disabilities in the hopes of finding out which components of the intervention programs were most effective in improving students' reading comprehension. Out of five intervention components studied, Kim et al. (2012)concluded that 'strategy instruction' which is defined as explicitly teaching students to identify the main idea, identify underlying text structures, or to summarize passages, was most consistently seen to improve reading comprehension outcomes for students with learning disabilities.

As noted by Roberts, Torgesen, Boardman and Scammacca (2008), good readers monitor their own comprehension and are able to recognize when they are not understanding something and deploy appropriate 'repair' strategies such as defining confusing words, re-reading strategically, creating a mental image, or slowing their

reading rate. Struggling secondary readers often fail to implement comprehension repair strategies, either because they do not initially monitor their comprehension, or because they do not possess the tools needed to repair comprehension misunderstandings when they occur. In order to independently utilize comprehension-monitoring strategies, students with learning disabilities will benefit from direct instruction in not only the strategies, but when and how to use them. Any program designed to remediate reading comprehension deficits in secondary students should therefore include these components.

Structuring Effective Instruction

Although students are expected to be proficient readers by middle and high school, it is the secondary students who continue to struggle who are infrequently provided with best practice reading instruction (Edmonds et al., 2009). As noted by Wanzek, Vaughn, Roberts and Fletcher (2011), remediating reading difficulties in older students requires a considerable amount of resources, both in intensity of service and in differentiation of instruction. This is concerning, as explicit instruction in reading, including the teaching of basic reading skills and of reading comprehension strategies, is necessary for students to develop these skills (Joseph & Schisler, 2009; Kim et al., 2012; King-Sears & Bowman-Kruhm, 2009). Further complicating the goal of providing best practice instruction to struggling secondary readers is a reported lack of teacher preparation coursework designed to train special education teachers in the skills needed to effectively teach reading (Bishop, Brownell, Klingner, Leko & Galman, 2010). Due to a lack of training, secondary level educators who are unsure about how to best teach reading skills may find themselves at a loss when determining which instructional

methods to use when working with struggling secondary readers (Joseph & Schisler, 2009). As noted by Faggella-Luby and Deshler (2008), struggling adolescent readers require different instructional emphases to improve reading comprehension, which necessitates a shift towards training secondary teachers in best practice instructional methods, such as strategy instruction. Secondary teachers, therefore, "require knowledge of best practices to provide appropriate instruction, prevent students from falling farther behind, and help bring struggling readers closer to reading for knowledge" (Edmonds et al., 2009, p. 263).

In a 2009 study, Mariage et al. found that most special education teachers created their own reading curriculum rather than using a published curriculum, which indicates special education reading instruction to be both highly variable and difficult to improve from a pedagogical perspective. The same special education teachers studied also reported a lack of professional development in the area of pedagogy, in addition to displaying confusion about what constituted special education programming at the school level, even within districts (Mariage et al., 2009). When curriculum is variable and teachers are not provided with meaningful professional development in reading pedagogy, it is no wonder secondary special education students struggling with reading rarely close the gap between themselves and their grade-level peers. Systematic instruction in reading is critical in order for struggling students to become functional readers, with the explicit teaching of remedial reading skills being one effective way to obtain this goal (Joseph & Schisler, 2009). In order to remove this barrier, teachers must

be provided with training in order to feel confident in their skills to teach basic reading skills to older students.

Dedicating a highly trained teacher to provide systematic and intensive reading instruction to a small group of secondary students is an expensive practice, and not many education settings are able to afford this model (Wanzek et al., 2011). Additionally, obtaining the curricular resources and dedicating the time needed to thoroughly train teachers to properly implement such curricula adds even more expense to the implementation of this model of instruction. However, this is exactly what this study proposes.

The *Corrective Reading* Program

SRA's *Corrective Reading* is a published curriculum designed to improve reading achievement for students in grades 3-12 who are as much as four grade levels behind in reading ability (Marchand-Martella, Martella & Przychodzin-Havis, n.d.). According to Shapiro (2004), *Corrective Reading* is based upon the guiding principles of direct instruction, which include scripted lessons, small groups, choral responding, signaling, modeling, corrective feedback, effective pacing and praise (as cited in McDaniel et al., 2010). As noted by Hummel, Wiley, Huitt, Roesch, and Richardson (2004), the Direct Instruction (DI) model of teaching includes signaling students to respond, the immediate correction of student mistakes, and teacher reinforcement of correct student responses. In order for teachers to acquire an understanding of the principles of DI and learn how to implement the *Corrective Reading* program with fidelity, prior to implementation teachers must attend workshop trainings conducted by a SRA representative.

Additionally, SRA recommends that *Corrective Reading* program representatives conduct 'check-ins' and provide follow-up coaching support to teachers once they begin to utilize the program (Hummel et al., 2004; U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, What Works Clearinghouse, 2010).

The *Corrective Reading* program has two components, *Corrective Reading Decoding* and *Corrective Reading Comprehension*, both of which are designed to provide intense and systematic direct instruction in order to remediate basic reading skill deficits for struggling adolescent readers (McDaniel et al., 2010; USDOE, IES, NCEERA, WWC, 2010). *Corrective Reading* can be implemented in either small groups or with an entire class, and is recommended for implementation forty-five minutes per day, four to five days per week (USDOE, IES, NCEERA, WWC, 2010). The *Decoding* and *Comprehension* components can be put together in order to provide students with two periods of instruction per day, or utilized independently to provide students with one period of instruction per day (USDOE, IES, NCEERA, WWC, 2010). Placement tests determine the level at which students should begin; students must complete all the lessons in that level before moving on to the next level, and all levels include ongoing assessments and mastery tests to track student achievement (USDOE, IES, NCEERA, WWC, 2010). The goals of the *Decoding* component are to increase a student's decoding, word reading, and reading fluency skills; the goals of the *Comprehension* component are to increase a student's comprehension skills and vocabulary knowledge (Benner, Nelson, Stage, & Ralston, 2011).

The *Corrective Reading Comprehension* program is specifically designed to change the behavior of students who struggle to understand what they read. These students may also have poor memory of information or poor statement repetition skills, lack the analytical skills required to process arguments, or exhibit deficiencies in vocabulary and common information (Marchand-Martella et al., n.d.). The *Corrective Reading Comprehension* component progressively builds academic language and addresses student vocabulary knowledge and text comprehension abilities through increasing levels of difficulty (USDOE, IES, NCEERA, WWC, 2010). There are 65 lessons in Level A, 60 lessons in Level B1, 65 lessons in Level B2, and 140 lessons in Level C. Level A is designed for students who are struggling with basic academic skills and have trouble comprehending oral language (Marchand-Martella et al., n.d.; USDOE, IES, NCEERA, WWC, 2010).

Evidence Base on *Corrective Reading*

The body of research behind the *Corrective Reading Decoding* component supports the assertion that it is an effective program for developing word attack and reading fluency skills in middle school students with significant reading deficits across settings; however, there are no published studies on the effectiveness of the *Corrective Reading Comprehension* component (USDOE, IES, NCEERA, WWC, 2010). All articles found when reviewing the literature have researched the *Corrective Reading Decoding* component only. This proposed study would add to the literature for reading comprehension instruction for students with significant reading deficits at the middle

school level by evaluating the *Corrective Reading Comprehension* component as a curriculum.

CHAPTER III

METHODOLOGY

Research Site

This research study was conducted during the 2015-2016 school year at a public middle school located in the western suburbs of Chicago, Illinois. The school served just under six hundred students in grades six, seven, and eight. According to the 2015-2016 Illinois Interactive Report Card, approximately 63% of students were Caucasian, 30% were Hispanic, 3% were Black, 2% were Asian, and 2% were Two or More Races. Students from low-income backgrounds made up 17% of the school population, <1% of the student body was homeless, and <1% of the student body was classified as English learners. Twelve percent of students at the school had an identified disability and received Special Education services. The average class size was 22 students. Sixty percent of the student body 'Met' or 'Exceeded' expectations on the English Language Arts portion of the 2014-2015 Partnership for Assessment of Readiness for College and Careers (PARCC) test, and 52% 'Met' or 'Exceeded' expectations on the English Language Arts portion of the 2015-2016 PARCC test.

Research Participants

Participants for the study included sixth, seventh, and eighth grade special education students placed in small group special education English Language Arts classes, and the teachers of those classes. At the middle school in question, special

education students were placed in small group special education classes if they were three or more years behind in reading and had not yet mastered basic reading skills. Students in each class were eligible for participation in the research study if they were eligible for special education services under the category of Specific Learning Disability in Reading and if the results from their initial *Corrective Reading* placement test indicated instruction with Level A of the *Corrective Reading Comprehension* program to be appropriate.

Level A of the *Corrective Reading Comprehension* component consists of 65 lessons for students who do not understand the underlying concepts of what is taught in their classrooms. Level A of the *Comprehension* component begins with teaching students to comprehend oral language through teacher-led exercises (USDOE, IES, NCEERA, WWC, 2010). Student participant characteristics are documented in Table 1.

Student participants included 15 students enrolled in the sixth, seventh, and eighth grade small group special education English Language Arts classes. The sixth grade class was composed of eight students, five of whom were eligible for participation in the study. Of the five students, three were male and two were female. No students were classified as English Learner (EL). No students were new to the district at start of 2015-2016 school year. All students who participated in the study had 'Reading Comprehension' stated as an area of need on their Individual Education Plan (IEP), along with a corresponding IEP goal for reading comprehension. All participating students placed into Level A of the *Corrective Reading Comprehension* program when given the initial placement test.

Table 1

Participant Characteristics

Student	Grade	Age	Gender	Student Ethnicity
6th Grade				
A	6	11	Male	Hispanic
B	6	11	Male	Black
C	6	12	Male	Two or More Races
D	6	12	Female	Hispanic
E	6	11	Female	Hispanic
7th Grade				
F	7	12	Female	Caucasian
G	7	13	Male	Caucasian
H	7	13	Female	Hispanic
I	7	13	Female	Caucasian
J	7	12	Male	Caucasian
K	7	12	Female	Caucasian
8th Grade				
L	8	13	Female	Caucasian
M	8	14	Male	Black
N	8	14	Male	Caucasian
O	8	13	Female	Two or More Races

The seventh grade class was comprised of nine students, six of whom were eligible for participation in the research study. Of the six students, two were male and four were female. No students were classified as English Learner (EL). One female student was new to the school district at the start of the 2015-2016 school year. All students who participated in the study had 'Reading Comprehension' stated as an area of need on their IEP, along with a corresponding IEP goal for reading comprehension. All participating students placed into Level A of the *Corrective Reading Comprehension* program when given the initial placement test.

The eighth grade class was comprised of six students, four of whom were eligible for participation in the research study. Of the four students, two were male and two were female. No students were classified as English Learner (EL). No students were new to the district at start of 2015-2016 school year. All students who participated in the study had 'Reading Comprehension' stated as an area of need on their IEP, along with a corresponding IEP goal for reading comprehension. All participating students placed into Level A of the *Corrective Reading Comprehension* program when given the initial placement test.

Teacher participants included three Caucasian females in the 25 to 35 year old age range who were certified Special Education teachers and had been fully trained in the *Corrective Reading Decoding* and *Comprehension* programs. One teacher was trained in *Corrective Reading Decoding* and *Comprehension* when employed by a previous district, and two teachers were trained over the course of two full day sessions in September 2015.

Instruments

Throughout the 2015-2016 school year, the reading progress of students in the three small group classes was measured with AIMSweb reading passages. The AIMSweb reading curriculum-based measurement (R-CBM) is a brief, individually administered reading passage that is designed to identify students who are struggling readers (Pearson Education, Inc., 2012d). AIMSweb reading curriculum-based measurements are general outcome measures, designed for screening and monitoring progress over time, and use a student's rate of oral reading fluency as an indicator of overall reading proficiency

(Pearson Education, Inc., 2012c; Pearson Education, Inc., 2012d). Passages were independently developed and are not tied to any particular curriculum, meaning they assess proficiency of a sampling of key skills typically taught in a given grade level and/or generic tasks that are good indicators of the core ability being assessed (Pearson Education, Inc., 2012c; Pearson Education, Inc., 2012d). AIMSweb R-CBM passages are proven to be standardized and reliable, and are sensitive to improvement in the skill area assessed, such that "an increase in ability will be reflected in rising scores on the measure" (Pearson Education, Inc., 2012c, p. 8). This means that any increase in reading skill, such as a gain in decoding skills, increase in reading rate, increase in vocabulary knowledge, or increase in comprehension ability, could be reflected in the R-CBM progress monitoring data. The National Center on Intensive Intervention (n.d.) has reviewed extensive research and has found AIMSweb R-CBM passages to have high alternate form, inter-rater, split-half and test-retest reliability, in addition to adequate predictive and construct validity (Pearson Education Inc., 2012e). This essentially means that if a reading curriculum is effective and students are building reading skills, student reading progress should be reflected as measured by AIMSweb R-CBM passages.

During initial R-CBM assessment, students were asked to read three grade-level passages for one minute each; a score was then calculated for each passage by subtracting the number of reading errors made from the total number of words read, and the median of each 'words read correctly' and 'errors made' was considered the student's final score (Pearson Education, Inc., 2012d). Student progress in reading can also be monitored over time by assessing students with one AIMSweb R-CBM passage on a weekly basis

(Pearson Education, Inc., 2012d). Although teachers had been previously trained in the administration of AIMSweb R-CBM, in August 2015 this researcher reviewed with all three teachers the administration procedures and standardized directions for AIMSweb R-CBM. Classroom teachers then assessed students on a weekly basis with AIMSweb R-CBM grade level passages.

The progress of students receiving *Corrective Reading* instruction, and therefore the potential effectiveness of the *Corrective Reading Comprehension* intervention was also measured with the use of Northwest Evaluation Association's Measures of Academic Progress (MAP) Reading test. The MAP Reading test is an untimed, individually computer-administered and computer adapted test taken by students across the United States (Northwest Evaluation Association, 2003). Test questions are extensively reviewed and are calibrated to achievement levels and the tests are adaptive and dynamic, becoming more or less difficult depending upon whether a student answers a given question in a given category correctly (Northwest Evaluation Association, 2003). The MAP Reading test evaluates student reading achievement by assigning students questions from the following four categories: word meaning (use context clues, use synonyms/antonyms/homonyms, use component structure, interpret multiple meanings), literal comprehension (recall/sequence details, interpret directions, classify facts, identify main idea), interpretive comprehension (draw inferences, recognize cause and effect, predict events, summarize and synthesize) and evaluative comprehension (distinguish fact and opinion, recognize elements of persuasion, evaluate validity/point of view/ conclusions, detect bias and assumptions) (Northwest Evaluation Association, 2003).

With each test question presented, and the test is able to accurately more and more accurately pinpoint the student's level of reading proficiency (Northwest Evaluation Association, 2003, p. 12). The overall purpose of the MAP Reading test is to estimate and then hone in on a student's current level of reading achievement based upon the level of the questions they are able to answer correctly (Northwest Evaluation Association, 2003). MAP test scores are published on an equal-interval scale (Rausch Unit, or RIT) that easily shows growth over time (Northwest Evaluation Association, 2003). The national norms, published in 2011, include a sample of 20,000 students at each grade level from all 50 states, drawn from a pool of 5.1 million test records (Northwest Evaluation Association, 2011). Individual student fall to spring RIT growth projections are calculated after test administration, with estimated growth RIT values based upon the a student's grade, the subject area of the test, and the student's starting RIT score (Jensen, 2013). Jensen notes that growth projections are intended to be reasonable estimates of average student performance, and that "50%-60% of students nationwide meet or exceed their growth projections" (2013, para. 5).

The MAP test has been shown to be reliable. Fall to spring test-retest reliability is very high for sixth, seventh and eighth grades (0.91), while marginal reliability (the expected correlation between two hypothetical tests taken by the same student across multiple test forms) ranges from 0.94-0.96 (Northwest Evaluation Association, 2003). The standard error of measurement falls between 3.0 and 3.5 RIT score points, although this is larger at the extremes and can go as high as 8.0 (Northwest Evaluation Association, 2003). The MAP Reading test has also been shown to be valid, with high

content validity due to the test question selection algorithm ensuring alignment between goals and objectives of the test and the achievement level of the students, and high criterion (concurrent) validity as evidenced by comparison to the Stanford Achievement Test (r = 0.82-0.88) (Northwest Evaluation Association, 2003). It is suggested that MAP tests be taken three times per year; at 20 days of instruction (fall), 80 days of instruction (winter) and 130 days of instruction (spring) (Northwest Evaluation Association, 2003). Fortunately, the assessment timeframes at the site in question aligned well with *Corrective Reading* intervention implementation, as all students at the research site took the fall MAP test in September 2015 (at the start of baseline data collection), the winter MAP test in December 2015 (one week after the intervention began), and the spring MAP test in May 2016 (two weeks before the intervention concluded).

In order to gauge the acceptability and social validity of the *Corrective Reading Comprehension* intervention, student and teacher research participants were given a questionnaire at the end of intervention implementation. The purpose of the student questionnaire was to gather information on how much students liked participating in the program, and how much they felt the program helped to improve their reading skills. The purpose of the teacher questionnaire was to gather information on how much they liked teaching with the program, and how much they felt participation in the program improved their students' reading skills. The acceptability measure given to students and teachers was an adapted version of the Behavior Intervention Rating Scale (BIRS), which has been designed to measure teachers' perceptions of classroom intervention effectiveness and treatment acceptability (Elliott & Treuting, 1991). The BIRS was modified for

students to in order to limit confusion and ensure understanding of the questions they were asked; questions and answer options were also read aloud to students as they took the survey. The BIRS was modified slightly for teachers to focus on a target behavior of reading, rather than overall student classroom behavior. The surveys administered to students and teachers are included in Appendix A.

Design and Data Analysis

A single case AB design was used with each student to evaluate the effect of the intervention as measured through continuous assessment with AIMSweb R-CBM passages. Baseline data was collected for all participants throughout September, October and November 2015, and intervention implementation began on November 30, 2015. The independent variable, also referred to as the intervention, was defined as 40 minutes, five days per week of instruction with Level A of the *Corrective Reading Comprehension* program. The dependent variables in this research were student's rate of increase (number of words read correctly multiplied by the number of weeks of intervention) on grade level AIMSweb R-CBM passages and MAP Reading test scores.

Students' rate of improvement (ROI) on weekly AIMSweb R-CBM passages was compared to the published AIMSweb Growth Norms in order to determine how much growth was made when compared peers at similar initial score levels (Pearson Education, 2012a; Pearson Education, 2012b). This analysis provided the researcher with the percentile amount of growth made relative to peers during baseline and intervention periods (Pearson Education, 2012a; Pearson Education, 2012b). Results were presented in a chart format (see Table 2) and were then summarized for each student.

The effect of the intervention as measured by R-CBM data was also analyzed through visual inspection, which allows an examiner to reach "a judgment about the reliability or consistency of intervention effects by visually examining the graphed data" (Kazdin, 2011, p. 286). Visual inspection assists examiners in focusing on interventions that clearly produce results (Kazdin, 2011). Individual student progress monitoring graphs were examined for characteristics related to magnitude of change and rate of change between baseline and intervention phases. Changes in magnitude were determined by a change in the average rate of performance across phases (mean score per phase) and/or by changes in level across phases, such as shifts in performance from the end of one phase to the start of another. Changes in rate were determined by changes in the trend of the data (slope of the trendline), and/or the latency of the change, such as the amount of time between intervention implementation and a change in performance. As noted in Kazdin, the more closely the change occurs to the start of intervention, the clearer the effect of the intervention.

Percentages of non-overlapping data were also calculated in order to determine treatment effect, which involved finding the percentage of data points during intervention that were higher than the highest score obtained during baseline for each student (Kazdin, 2011). As outlined in Kazdin, the higher the percentage of non-overlapping data points between baseline and intervention phases, the more effective the treatment. Scruggs, Mastropieri, Cook, and Escobar (1986) have outlined specific criteria for interpreting the percentage of non-overlapping data (PND), where "scores of 90% or higher represent highly effective outcomes, scores of 70% to 90% represent fair outcomes, scores of 50%

to 70% represent questionable effects, and scores below 50% suggest basically unreliable treatments" (p. 262). These criteria were used to judge treatment effectiveness for each student.

An analysis of each student's MAP Reading test data was used as an additional indicator of intervention effectiveness, with individual student growth examined from fall to winter (baseline) and winter to spring (intervention). The actual yearly RIT point growth made by each student on the MAP Reading test was compared to the projected RIT point growth calculated by the MAP Reading test. In addition, individual student percentile gain over the course of the year was inspected in order to determine the amount of progress made as compared to grade level peers.

An analysis of student survey responses was conducted using a calculation of means in order to determine the classification of the overall responses for students in each grade level, and the tone of individual responses in each grade level.

An analysis of teacher survey responses was conducted using a calculation of means in order to determine the classification of the overall responses for each grade level teacher, in addition to the tone of teachers across grade levels.

Researcher Role

The role of this researcher within the middle school at which the research was conducted is that of full-time School Psychologist. As related to the research study, the researcher's role was to review AIMSweb R-CBM administration criteria with teachers at the start of the year, occasionally observe implementation of the *Corrective Reading Comprehension* program, obtain consent to participate from study participants (and

parents of student participants), administer the acceptability survey to teachers and provide instruction for teacher on how to administer the acceptability survey to students, and conduct the analysis of the data.

Study Procedures

At the start of the 2015-2016 school year, sixth, seventh, and eighth grade special education students placed in small group English Language Arts classes began to receive a modified version of the school's core reading curriculum for 80 minutes per day (a total of 400 minutes per week). Weekly progress monitoring with R-CBM passages began in August 2015. In September 2015, a representative from the *Corrective Reading* program visited the school and administered placement tests to students in all small group special education English Language Arts classes in order to determine their starting placement in the *Corrective Reading* program. As one teacher had previously been trained in *Corrective* Reading, the two Special Education teachers who had not yet been trained attended two days of workshops to learn how to properly implement both *Decoding* and *Comprehension* components of the *Corrective Reading* program. On Monday, November 30, 2015, implementation of the *Corrective Reading Comprehension* component began for 40 minutes per day in each special education ELA class. From November 30 through May 27, students in the small group classes received 40 minutes per day of instruction with Level A of the *Corrective Reading Comprehension* program, and 40 minutes per day of modified grade-level core English Language Arts curriculum (a total of 400 minutes per week).

Classroom teachers collected weekly R-CBM progress monitoring data for each student participant. Teachers received check-ins and coaching support from a *Corrective Reading* program representative over the course of the year in order to ensure consistency of implementation. Students took the MAP Reading test three times over the course of the school year (fall, winter, and spring).

Intervention acceptability questionnaires were administered in September 2016 (after research study approval from Loyola's Institutional Review Board). Parent consent was requested in order to grant student participation in the questionnaire; student consent was also requested prior to survey administration. Teacher consent was requested prior to administration of the teacher questionnaire. This researcher then analyzed the rate of increase for each individual student's R-CBM progress monitoring and MAP Reading assessment data and responses from the acceptability questionnaires.

CHAPTER IV

RESULTS

The purpose of this research was to examine how much impact a two-trimester implementation of the *Corrective Reading Comprehension* program had upon the reading skills of special education students receiving instruction in small group ELA classes. The goal was to gather data on the effectiveness of the *Corrective Reading Comprehension* program as an intervention for middle school students with specific learning disability, as measured by two different types of data, and supported by student and teacher acceptability measures. Research questions consisted of:

1. To what extent does the *Corrective Reading Comprehension* program improve student reading growth as measured by weekly R-CBM progress monitoring data?
2. To what extent does the *Corrective Reading Comprehension* program improve student reading growth as measured by MAP Reading assessment data?
3. How acceptable was the *Corrective Reading Comprehension* program to students?
4. How acceptable was the *Corrective Reading Comprehension* program to teachers?

Alterations to Proposed Method

Consent forms, surveys, and the research proposal were reviewed by this author's doctoral research project committee chair and were approved by the Institutional Review Board of Loyola University Chicago on June 10, 2016. The 2015-16 school year ended on June 7, 2016. Therefore, student and teacher questionnaires were administered during September and October of the following (2016-2017) school year, rather than in May 2016 as planned.

Unfortunately, over the summer and fall months of 2016, there were a number of changes to study participants. One of the three teacher participants left the district over the summer, and was therefore not available to take the teacher survey in September. All four 8th grade participants moved on to a high school district to begin 9th grade in August 2016, and were also not available to take the survey. One 6th grade student and one 7th grade student moved out of the district during the summer months, and were also not available to take the survey. One parent declined to give permission for their student to take the survey. Two of the 6th grade students were provided with non-specific learning disability diagnoses over the summer and early fall months, and therefore no longer met criteria for participation in the research study.

This resulted in the total number of study participants being reduced to 13 students and two teachers, with six student surveys and two teacher surveys completed. Please refer to Table 2 for an updated list of study participants.

Table 2

Updated Participant Characteristics

Student	Grade	Age	Gender	Student Ethnicity	Survey completed?
6th Grade					
A	6	11	Male	Hispanic	No – Parent declined
C	6	12	Male	Two or More Races	Yes
D	6	12	Female	Hispanic	No – Student moved
7th Grade					
F	7	12	Female	Caucasian	Yes
G	7	13	Male	Caucasian	Yes
H	7	13	Female	Hispanic	Yes
I	7	13	Female	Caucasian	No – Student moved
J	7	12	Male	Caucasian	Yes
K	7	12	Female	Caucasian	Yes
8th Grade					
L	8	13	Female	Caucasian	No
M	8	14	Male	Black	No
N	8	14	Male	Caucasian	No
O	8	13	Female	Two or More Races	No

Research Question 1

To what extent does the Corrective Reading Comprehension program improve student reading growth as measured by weekly R-CBM progress monitoring data?

This question was evaluated both through use of AIMSweb Growth Norms and through visual inspection. Using the published AIMSweb Growth Norms, students' rate of improvement (ROI) from fall to winter and winter to spring was compared to that of peers at similar initial score levels in order to determine how much growth was made during baseline and intervention periods, as compared to similar peers. This also resulted in the percentile of growth made relative to similar peers over the course of the year.

Individual student progress monitoring graphs were created and visually inspected for characteristics related to magnitude of change, rate of change, and overall trend (Kazdin, 2011). Analysis of magnitude of change included inspection of changes in means and changes in level across phases, and the analysis of rate of change included changes in trend or slope and latency of change (Kazdin, 2011). The analysis included inspection of the differences in characteristics between phases (baseline versus intervention) for the purpose of determining a relationship between the variables. Percentages of non-overlapping data (PND) were calculated in order to determine treatment effect and were interpreted through the effect size guidelines reported above. Results are presented in Table 3, with individual student results explained below.

Table 3

Student ROI as Compared to AIMSweb Growth Norms

Student	Grade	Initial WRC Score	Fall Score %ile	AIMSweb Growth Norm Category	Fall-Winter ROI (Baseline)	Fall-Winter Growth Percentile	Winter-Spring ROI (Intervention)	Winter-Spring Growth Percentile	Net %ile Growth within Category
A	6	53	1st*	Very Low	-1.05	5th	-0.10	5th	0
C	6	115	24th*	Low	-1.67	5th	0.33	25th	20
D	6	90	9th*	Very Low	-0.81	5th	0.15	15th	10
F	7	117	23rd	Low	0.02	5th	0.82	55th	50
G	7	86	5th*	Very Low	-0.18	5th	0.34	25th	20
H	7	53	<1st	Very Low	-1.14	5th	1.33	85th	80
I	7	61	1st*	Very Low	1.62	95th	0.59	45th	-50
J	7	101	13th	Low	2.26	95th	0.83	65th	-30
K	7	139	45th	Average	-3.76	5th	0.88	65th	60
L	8	96	8th*	Very Low	-1.45	5th	0.78	65th	60
M	8	140	42nd	Average	0.49	45th	1.02	85th	40
N	8	127	29th	Average	-0.53	5th	0.65	65th	60
O	8	53	$<1^{st}$	Very Low	-0.03	5^{th}	0.88	65th	60

Note. * indicates benchmarking score fell between percentiles on grade-level National Norm chart; percentile rounded down to closest whole percentile.

Student A

AIMSweb growth norms. Student A is a 6th grade male. His initial AIMSweb fall benchmarking score of 53 WRC fell at the 1st percentile[1] compared to grade-level peers, which falls in the Very Low (≤10th %ile) range as determined by the AIMSweb Growth Norms chart. Student A's fall to winter growth ROI was -1.05, which puts him in the 5th percentile of growth within the Very Low range for the baseline timeframe. Student A's winter to spring growth ROI was -0.10, which puts him in the 5th percentile of growth within the Very Low range for the intervention timeframe. Student A had a growth percentile gain of 0 percentile points relative to grade-level peers within the same initial score category (Very Low).

Student A's ROI was negative during the baseline phase and became less negative during the intervention phase. However, Student A remained in the 5th percentile of growth in the Very Low range throughout the year, demonstrating no growth when compared to similar peers.

Visual inspection. Student A experienced a positive change in means across phases; his baseline mean score of words read correctly was 49.33 WRC, while his intervention mean score of words read correctly was 51.67 WRC (a gain of 2.33 WRC). While results indicate an immediate change in level between phases, this level change was not sustained through the intervention period. A change in trend also occurred, with the decelerating slope of the baseline trendline reducing to a less decelerating slope

[1]Indicates benchmarking score falls between percentiles on grade-level National Norm chart; percentile rounded down to closest whole percentile.

during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; only 2/15 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 13%, indicating unreliable treatment effect.

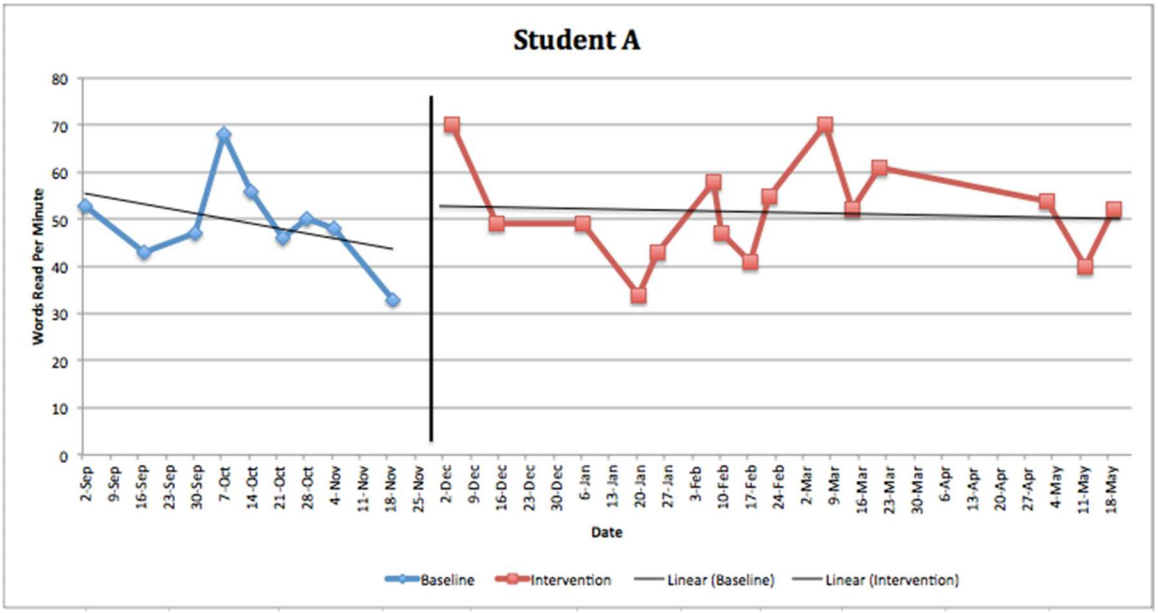

Figure 1. Student A Progress Monitoring Data

In summary, while a positive change occurred in the slope of Student A's trendline, it continued to be negative during the intervention phase. Student A did experience a positive change in means (+2), however as 87% of the data overlaps between phases, the effect of the intervention is unreliable.

Student C

AIMSweb Growth Norms. Student C is a 6th grade male. His initial AIMSweb fall benchmarking score of 115 WRC fell at the 24th percentile[2] compared to grade-level peers, which is classified as the Low (11th – 25th percentiles) range by the AIMSweb Growth Norms chart. Student C's fall to winter growth ROI was -1.67, which puts Student C in the 5th percentile of growth within the Low range for the baseline timeframe. Student C's winter to spring growth ROI was 0.33, which puts him in the 25th percentile of growth within the Low range for the intervention timeframe. Student C had a growth percentile gain of 20 percentile points relative to grade-level peers within the same initial score category (Low).

Student C's ROI was negative during the baseline phase, and changed to positive during the intervention phase. Student C moved from the 5th percentile of growth in the Low range to the 25th percentile of growth, demonstrating more growth than similar peers.

Visual inspection. Student C experienced a positive change in means across phases; his baseline mean score of words read correctly was 108.14 WRC, while his intervention mean score of words read correctly was 121.42 WRC (a gain of 13.28 WRC). A slight decrease in level occurred between phases. A change in trend occurred, with the decelerating slope of the baseline trendline to changing to an accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; only 7/19

[2]Indicates benchmarking score falls between percentiles on grade-level National Norm chart; percentile rounded down to closest whole percentile.

intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 37%, indicating unreliable treatment effect.

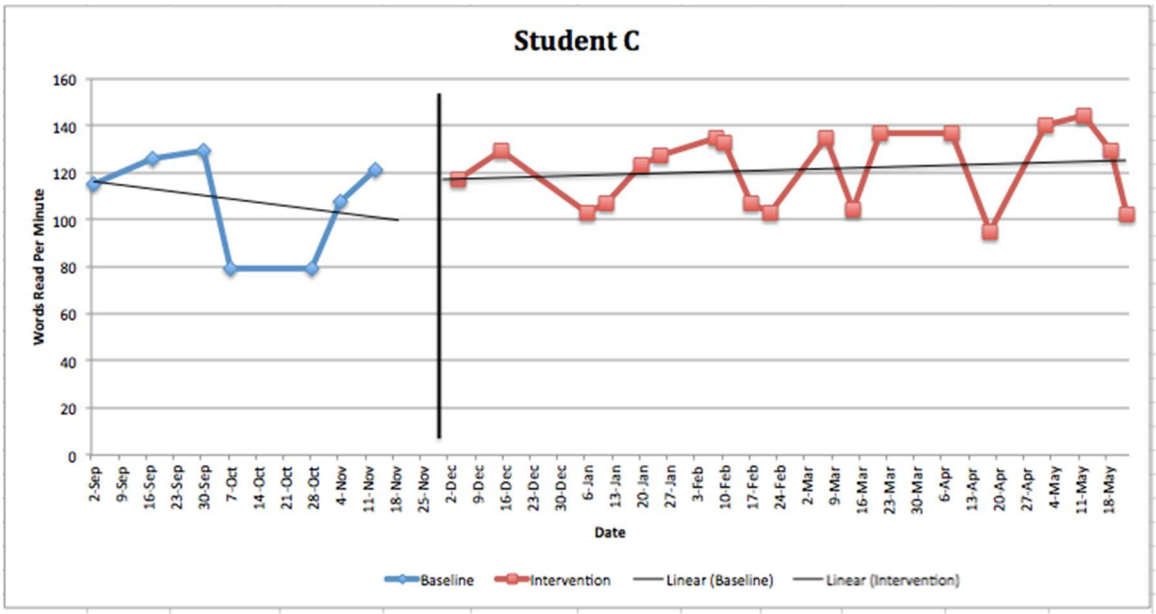

Figure 2. Student C Progress Monitoring Data

In summary, a positive change occurred in the slope of Student C's trendline during the intervention phase. Student C also experienced a positive change in means (+13), however as 63% of the data overlaps between phases, the effect of the intervention is unreliable.

Student D

AIMSweb Growth Norms. Student D is a 6th grade female. Her initial AIMSweb fall benchmarking score of 90 WRC fell at the 9th percentile[3] compared to grade-level peers, which is classified as the Very Low (≤10th %ile) range which is classified as by the AIMSweb Growth Norms chart. Student D's fall to winter growth ROI was -0.81, which

[3]Indicates benchmarking score falls between percentiles on grade-level National Norm chart; percentile rounded down to closest whole percentile.

puts her in the 5th percentile of growth within the Very Low range for the baseline timeframe. Student D's winter to spring growth ROI was 0.15, which puts her in the 15th percentile of growth within the Very Low range for the intervention timeframe. Student D had a growth percentile gain of 10 percentile points relative to grade-level peers within the same initial score category (Very Low).

Student D's ROI was negative during the baseline phase, and changed to positive during the intervention phase. Student D moved from the 5th percentile of growth in the Very Low range to the 15th percentile of growth, demonstrating more growth than similar peers.

Visual inspection. Student D experienced a positive change in means across phases; her baseline mean score of words read correctly was 84.60 WRC, while her intervention mean score of words read correctly was 88.18 WRC (a gain of 3.58 WRC). An increase in level occurred between phases. A change in trend occurred, with the decelerating slope of the baseline trendline to changing to an accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; only 4/17 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 24%, indicating unreliable treatment effect.

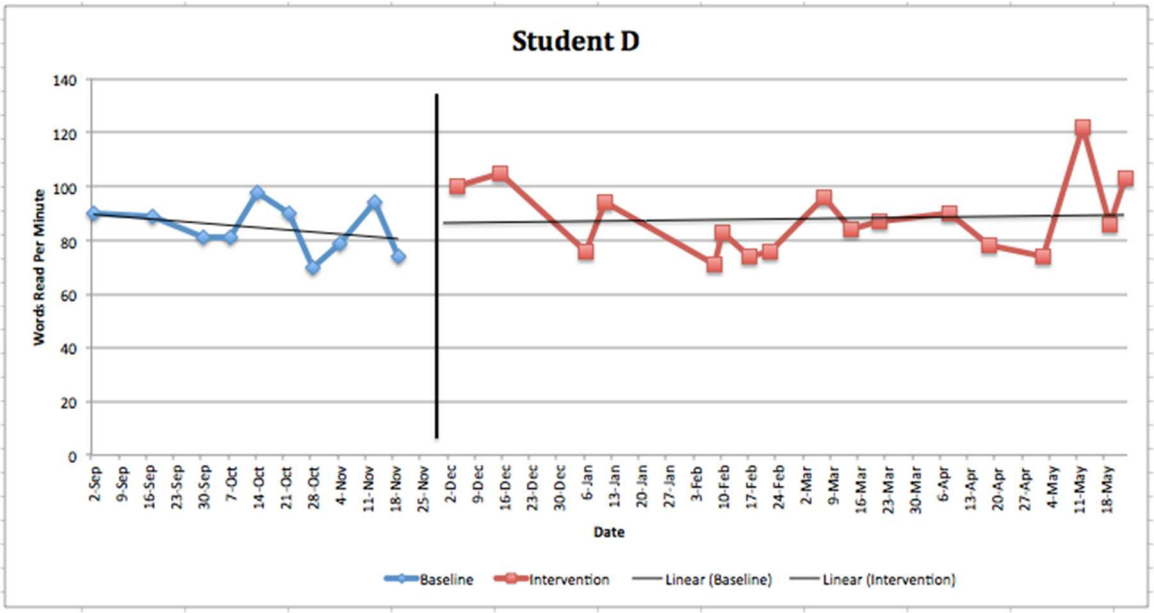

Figure 3. Student D Progress Monitoring Data

In summary, a positive change occurred in the slope of Student D's trendline during the intervention phase. Student D also experienced a positive change in means (+3), however as 76% of the data overlaps between phases, the effect of the intervention is unreliable.

Student F

AIMSweb growth norms. Student F is a 7th grade female. Her initial AIMSweb fall benchmarking score of 117 WRC fell at the 23rd percentile compared to grade-level peers, which is classified as the Low (11th – 25th percentiles) range by the AIMSweb Growth Norms chart. Student F's fall to winter growth ROI was 0.02, which puts her in the 5th percentile of growth within the Low range for the baseline timeframe. Student F's winter to spring growth ROI was 0.82, which puts her in the 55th percentile of growth within the Low range for the intervention timeframe. Student F had a growth percentile

gain of 50 percentile points relative to grade-level peers within the same initial score category (Low).

Student F's ROI was positive during the baseline phase, and grew more positive during the intervention phase. Student F moved from the 5th percentile of growth in the Low range to the 55th percentile of growth, demonstrating more growth than similar peers.

Visual inspection. Student F experienced a positive change in means across phases; her baseline mean score of words read correctly was 105.80 WRC, while her intervention mean score of words read correctly was 129.73 WRC (a gain of 23.93 WRC). A slight increase in level occurred between phases. A change in trend occurred, with the decelerating slope of the baseline trendline to changing to an accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; only 7/15 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 47%, indicating unreliable treatment effect.

In summary, a positive change occurred in the slope of Student F's trendline during the intervention phase. Student F also experienced a positive change in means (+25), however as 53% of the data overlaps between phases, the effect of the intervention is unreliable.

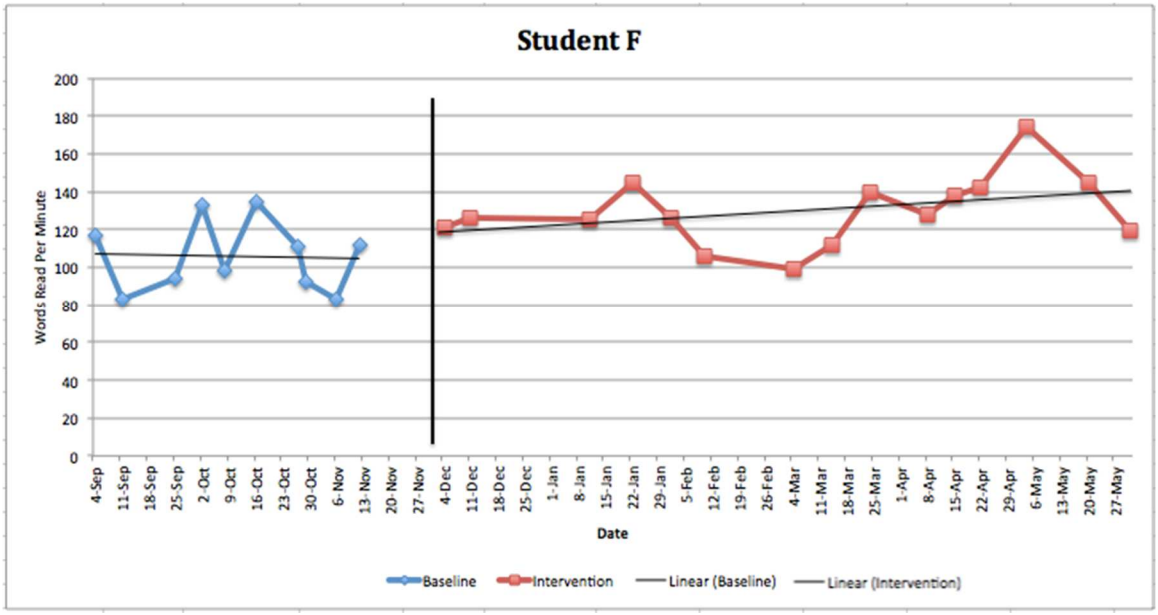

Figure 4. Student F Progress Monitoring Data

Student G

AIMSweb growth norms. Student G is a 7th grade male. His initial AIMSweb fall benchmarking score of 86 WRC fell at the 5th percentile[4] compared to grade-level peers, which is classified as the Very Low (≤10th %ile) range by the AIMSweb Growth Norms chart. Student G's fall to winter growth ROI was -0.18, which puts him in the 5th percentile of growth within the Very Low range for the baseline timeframe. Student G's winter to spring growth ROI was 0.35, which puts him in the 25th percentile of growth within the Very Low range for the intervention timeframe. Student G had a growth percentile gain of 20 percentile points relative to grade-level peers within the same initial score category (Very Low).

[4]Indicates benchmarking score falls between percentiles on grade-level National Norm chart; percentile rounded down to closest whole percentile.

Student G's ROI was negative during the baseline phase, and changed to positive during the intervention phase. Student G moved from the 5th percentile of growth in the Very Low range to the 25th percentile of growth, demonstrating more growth than similar peers.

Visual inspection. Student G experienced a positive change in means across phases; his baseline mean score of words read correctly was 66.67 WRC, while his intervention mean score of words read correctly was 70.25 WRC (a gain of 3.58 WRC). A decrease in level occurred between phases. A change in trend occurred, with the decelerating slope of the baseline trendline to changing to an accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; only 2/12 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 17%, indicating unreliable treatment effect.

In summary, a positive change occurred in the slope of Student G's trendline during the intervention phase. Student G also experienced a positive change in means (+3), however as 83% of the data overlaps between phases, the effect of the intervention is unreliable.

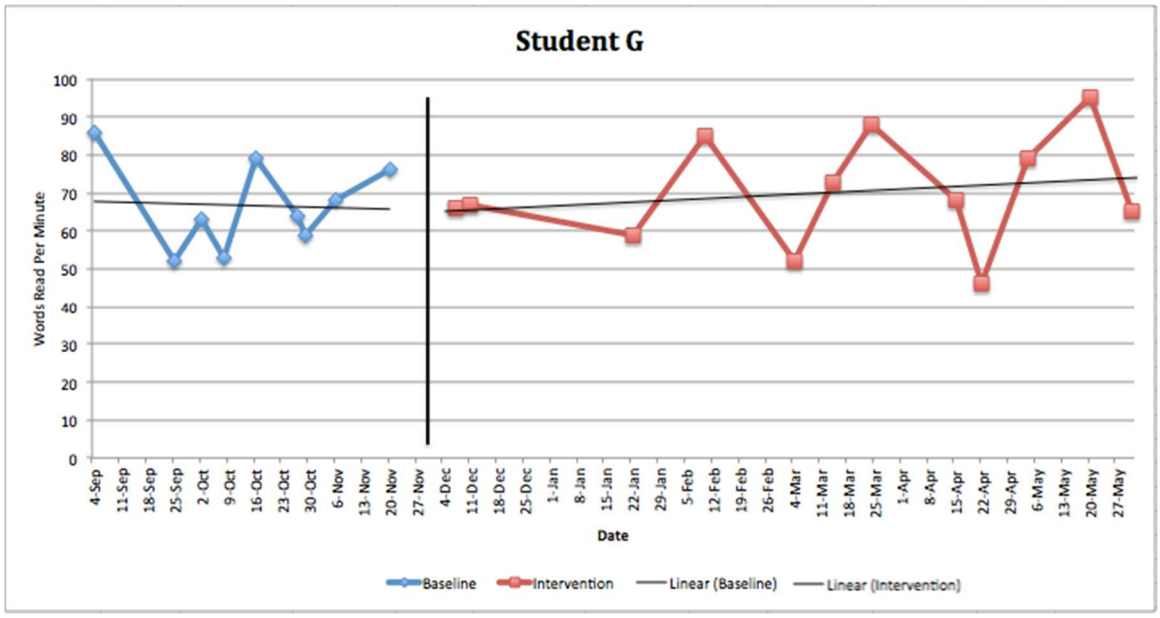

Figure 5. Student G Progress Monitoring Data

Student H

AIMSweb growth norms. Student H is a 7th grade female. Her initial AIMSweb fall benchmarking score of 53 WRC fell below 1st percentile compared to grade-level peers, which is classified as the Very Low (≤10th %ile) range by the AIMSweb Growth Norms chart. Student H's fall to winter growth ROI was -1.14, which puts her in the 5th percentile of growth within the Very Low range for the baseline timeframe. Student H's winter to spring growth ROI was 1.33, which puts her in the 85th percentile of growth within the Very Low range for the intervention timeframe. Student H had a growth percentile gain of 80 percentile points relative to grade-level peers within the same initial score category (Very Low).

Student H's ROI was negative during the baseline phase, and changed to positive during the intervention phase. Student H moved from the 5th percentile of growth in the

Very Low range to the 85th percentile of growth, demonstrating more growth than similar peers.

Visual inspection. Student H experienced a positive change in means across phases; her baseline mean score of words read correctly was 40.22 WRC, while her intervention mean score of words read correctly was 51.64 WRC (a gain of 11.41 WRC). An increase in level occurred between phases. A change in trend occurred, with the decelerating slope of the baseline trendline to changing to an accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; only 3/11 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 27%, indicating unreliable treatment effect.

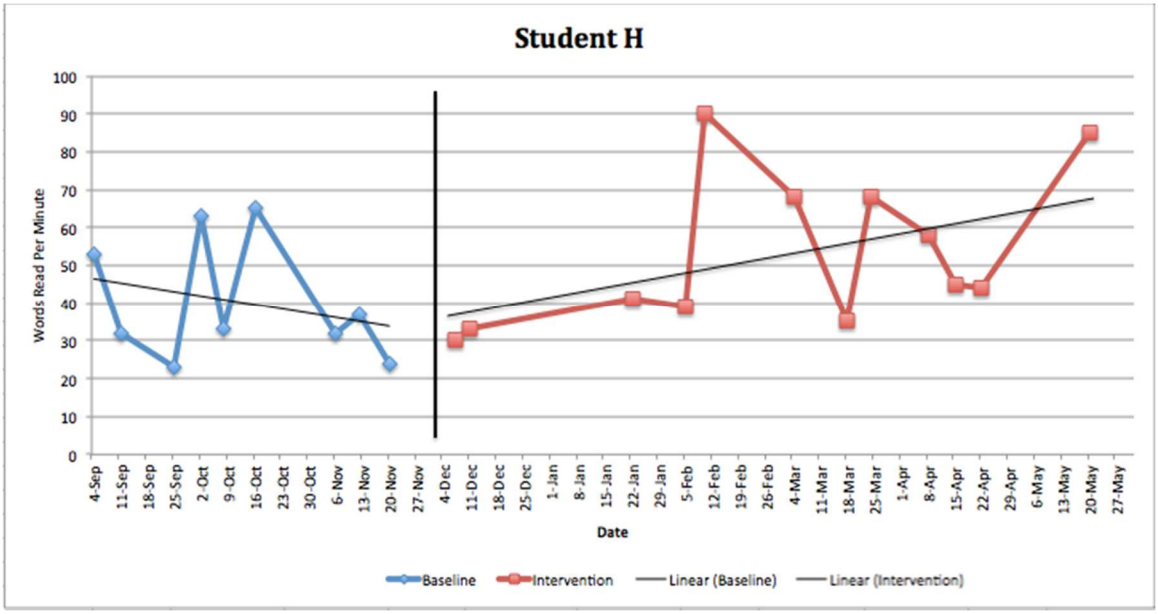

Figure 6. Student H Progress Monitoring Data

In summary, a positive change occurred in the slope of Student H's trendline during the intervention phase. Student H also experienced a positive change in means (+11), however as 73% of the data overlaps between phases, the effect of the intervention is unreliable.

Student I

AIMSweb growth norms. Student I is a 7th grade female. Her initial AIMSweb fall benchmarking score of 61 WRC fell at the 1st percentile[5] compared to grade-level peers, which is classified as the Very Low (≤10th %ile) range as determined by the AIMSweb Growth Norms chart. Student I's fall to winter growth ROI was 1.62, which puts her in the 95th percentile of growth within the Very Low range for the baseline timeframe. Student I's winter to spring growth ROI was 0.59, which puts her in the 45th percentile of growth within the Very Low range for the intervention timeframe. Student I had a growth percentile gain of -50 percentile points relative to grade-level peers within the same initial score category (Very Low).

Student I's ROI was positive during the baseline phase, and while it remained positive, growth decreased during the intervention phase. Student I moved from the 95th percentile of growth in the Very Low range to the 45th percentile of growth, demonstrating less growth than similar peers.

Visual inspection. Student I experienced a positive change in means across phases; her baseline mean score of words read correctly was 58.25 WRC, while her intervention mean score of words read correctly was 77.00 WRC (a gain of 18.75 WRC).

[5]Indicates benchmarking score falls between percentiles on grade-level National Norm chart; percentile rounded down to closest whole percentile.

No change in level occurred between phases. A change in trend occurred, with the accelerating slope of the baseline trendline to changing to a less accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; only 5/12 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 42%, indicating unreliable treatment effect.

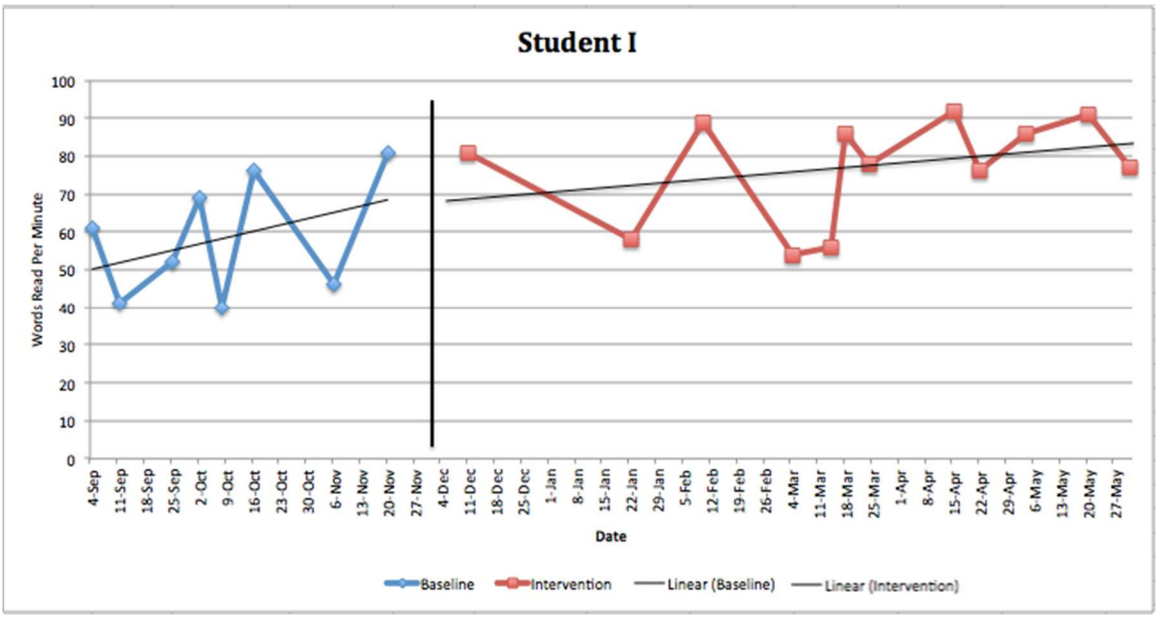

Figure 7. Student I Progress Monitoring Data

In summary, while a negative change occurred in the slope of Student I's trendline, it continued to be positive during the intervention phase. Student I also experienced a positive change in means (+19), however as 58% of the data overlaps between phases, the effect of the intervention is unreliable.

Student J

AIMSweb growth norms. Student J is a 7th grade male. His initial AIMSweb fall benchmarking score of 101 WRC fell at the 13th percentile compared to grade-level peers, which is classified as the Low (11th – 25th percentiles) range by the AIMSweb Growth Norms chart. Student J's fall to winter growth ROI was 2.26, which puts him in the 95th percentile of growth within the Low range for the baseline timeframe. Student J's winter to spring growth ROI was 0.83, which puts him in the 65th percentile of growth within the Low range for the intervention timeframe. Student J had a growth percentile gain of -30 percentile points relative to grade-level peers within the same initial score category (Low).

Student J's ROI was positive during the baseline phase, and while it remained positive, growth decreased during the intervention phase. Student J moved from the 95th percentile of growth in the Low range to the 65th percentile of growth, demonstrating less growth than similar peers.

Visual inspection. Student J experienced a positive change in means across phases; his baseline mean score of words read correctly was 103.44 WRC, while his intervention mean score of words read correctly was 135.80 WRC (a gain of 32.36 WRC). An increase in level occurred between phases. A change in trend occurred, with the accelerating slope of the baseline trendline to changing to a less accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was moderate; 6/10

intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 60%, indicating questionable treatment effect.

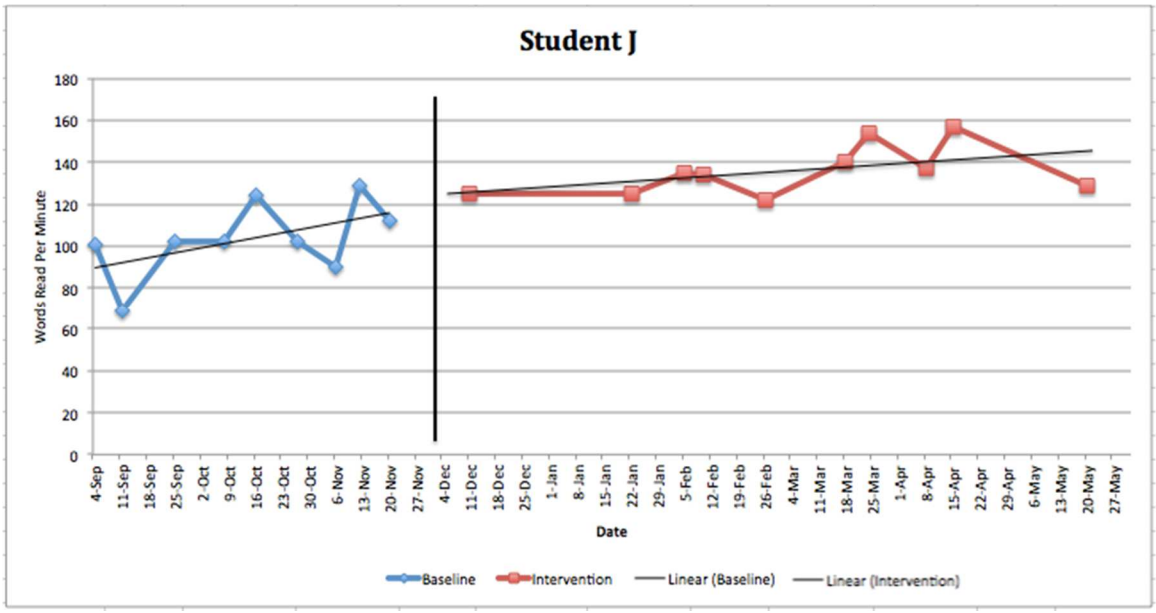

Figure 8. Student J Progress Monitoring Data

In summary, while a negative change occurred in the slope of Student J's trendline, it continued to be positive during the intervention phase. Student J also experienced a positive change in means (+32), however as 40% of the data overlaps between phases, the effect of the intervention is questionable.

Student K

AIMSweb growth norms. Student K is a 7th grade female. Her initial AIMSweb fall benchmarking score of 139 WRC fell at the 45th percentile compared to grade-level peers, which is classified as the Average (26th – 75th percentiles) range by the AIMSweb Growth Norms chart. Student K's fall to winter growth ROI was -3.76, which puts her in the 5th percentile of growth within the Average range for the baseline timeframe. Student

K's winter to spring growth ROI was 0.88, which puts her in the 25th percentile of growth within the Average range for the intervention timeframe. Student K had a growth percentile gain of 60 percentile points relative to grade-level peers within the same initial score category (Average).

Student K's ROI was negative during the baseline phase, and positive during the intervention phase. Student K moved from the 5th percentile of growth in the Average range to the 25th percentile of growth, demonstrating more growth than similar peers.

Visual inspection. Student K experienced a positive change in means across phases; her baseline mean score of words read correctly was 118.75 WRC, while her intervention mean score of words read correctly was 143.09 WRC (a gain of 24.34 WRC). An increase in level occurred between phases. A change in trend occurred, with the decelerating slope of the baseline trendline to changing to an accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; 3/11 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 27%, indicating unreliable treatment effect.

In summary, a positive change occurred in the slope of Student K's trendline during the intervention phase. Student K also experienced a positive change in means (+18), however as 73% of the data overlaps between phases, the effect of the intervention is unreliable.

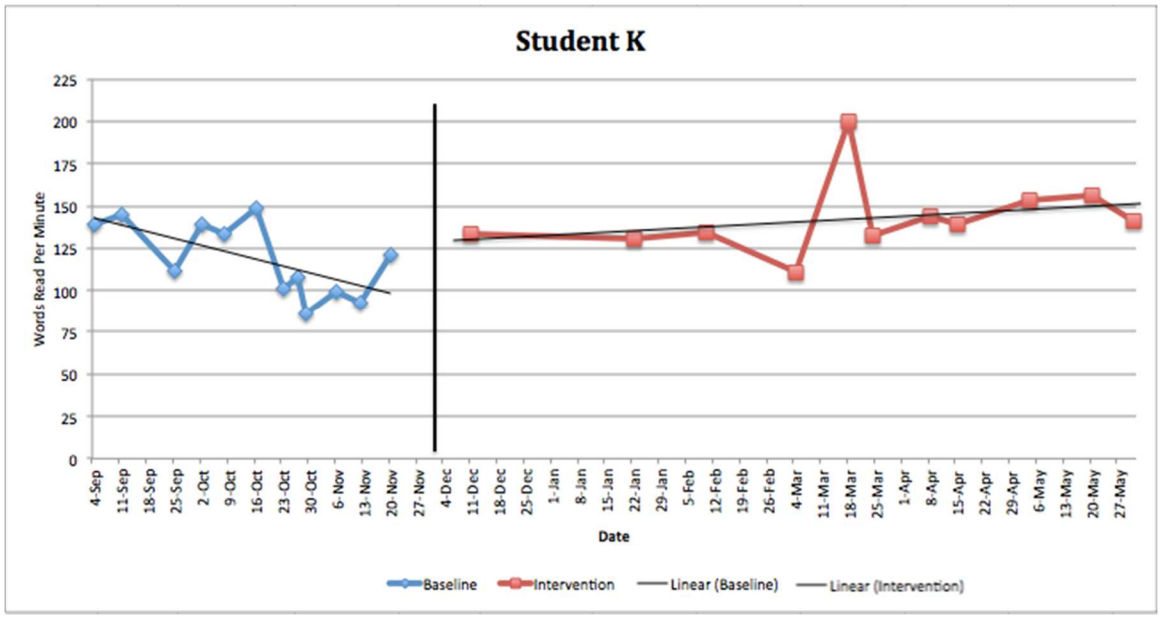

Figure 9. Student K Progress Monitoring Data

Student L

AIMSweb growth norms. Student L is an 8th grade female. Her initial AIMSweb fall benchmarking score of 96 WRC fell at the 8th percentile[6] compared to grade-level peers, which is classified as the Very Low (≤10th %ile) range by the AIMSweb Growth Norms chart. Student L's fall to winter growth ROI was -1.45, which puts her in the 5th percentile of growth within the Very Low range for the baseline timeframe. Student L's winter to spring growth ROI was 0.78, which puts her in the 65th percentile of growth within the Very Low range for the intervention timeframe. Student L had a growth percentile gain of 60 percentile points relative to grade-level peers within the same initial score category (Very Low).

[6]Indicates benchmarking score falls between percentiles on grade-level National Norm chart; percentile rounded down to closest whole percentile.

Student L's ROI was negative during the baseline phase, and positive during the intervention phase. Student L moved from the 5th percentile of growth in the Very Low range to the 65th percentile of growth, demonstrating more growth than similar peers.

Visual inspection. Student L experienced a positive change in means across phases; her baseline mean score of words read correctly was 88.73 WRC, while her intervention mean score of words read correctly was 96.60 WRC (a gain of 7.87 WRC). An increase in level occurred between phases, but was not sustained. A change in trend occurred, with the decelerating slope of the baseline trendline to changing to an accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; 2/20 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 10%, indicating unreliable treatment effect.

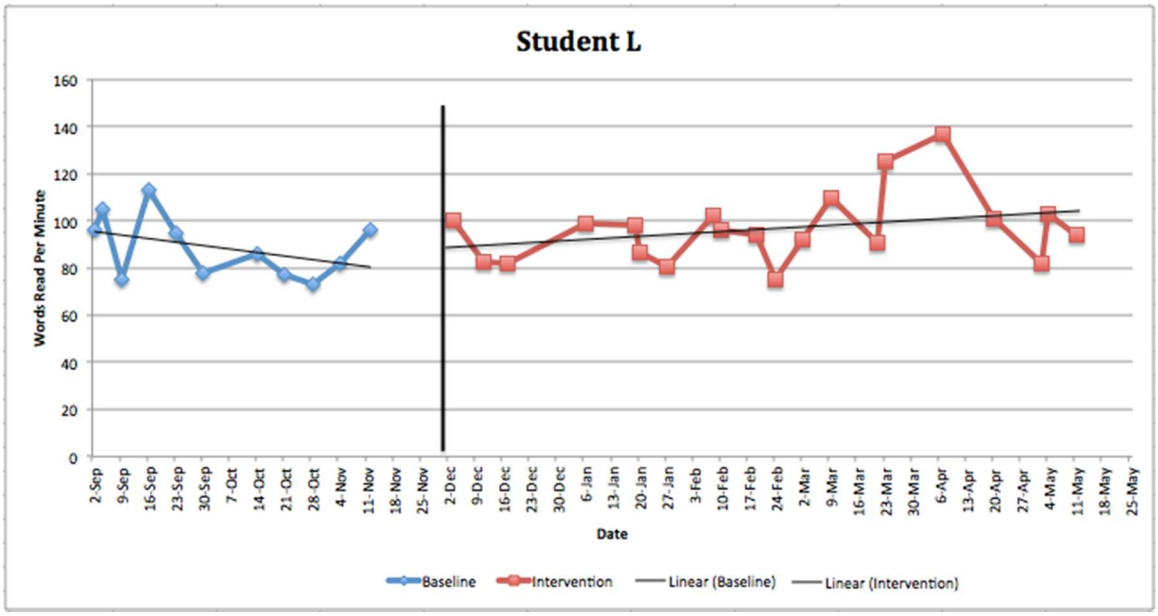

Figure 10. Student L Progress Monitoring Data

In summary, a positive change occurred in the slope of Student L's trendline during the intervention phase. Student L also experienced a positive change in means (+17), however as 90% of the data overlaps between phases, the effect of the intervention is unreliable.

Student M

AIMSweb growth norms. Student M is an 8th grade male. His initial AIMSweb fall benchmarking score of 140 WRC fell at the 42nd percentile compared to grade-level peers, which is classified as the Average (26th – 75th percentiles) range by the AIMSweb Growth Norms chart. Student M's fall to winter growth ROI was 0.49, which puts him in the 45th percentile of growth within the Average range for the baseline timeframe. Student M's winter to spring growth ROI was 1.02, which puts him in the 85th percentile of growth within the Average range for the intervention timeframe. Student M had a growth percentile gain of 40 percentile points relative to grade-level peers within the same initial score category (Average).

Student M's ROI was positive during the baseline phase, and grew to be more positive during the intervention phase. Student M moved from the 45th percentile of growth in the Average range to the 85th percentile of growth, demonstrating more growth than similar peers.

Visual inspection. Student M experienced a positive change in means across phases; his baseline mean score of words read correctly was 155.08 WRC, while his intervention mean score of words read correctly was 165.20 WRC (a gain of 10.12 WRC). A decrease in level occurred between phases. A change in trend occurred, with

the accelerating slope of the baseline trendline continuing to accelerate during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; 2/20 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 10%, indicating unreliable treatment effect.

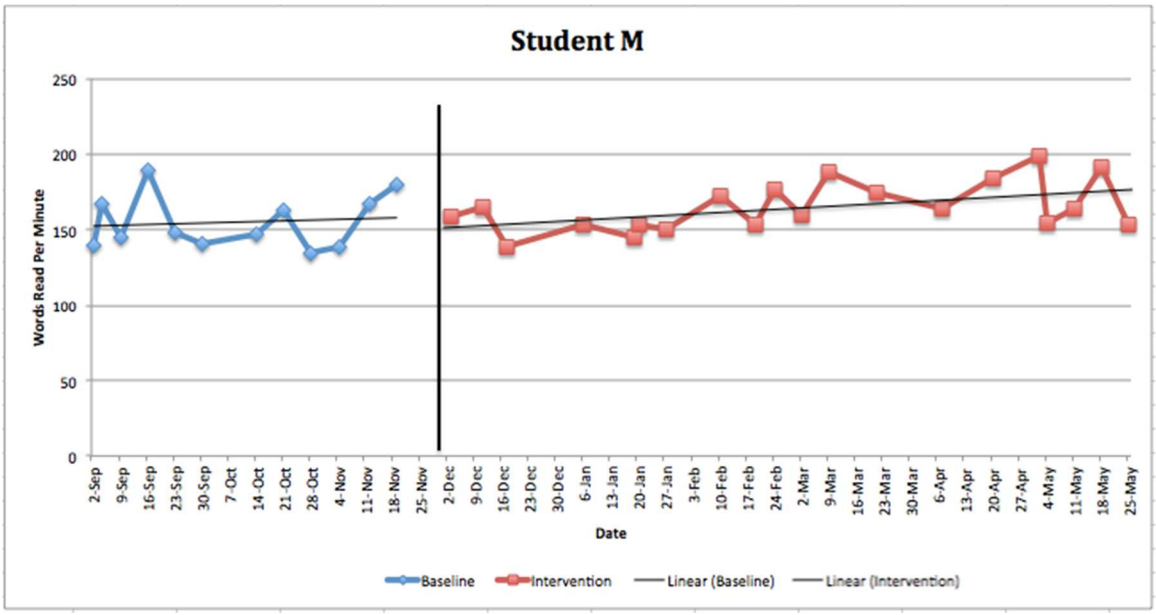

Figure 11. Student M Progress Monitoring Data

In summary, a positive change occurred in the slope of Student M's trendline during the intervention phase. Student M also experienced a positive change in means (+10), however as 90% of the data overlaps between phases, the effect of the intervention is unreliable.

Student N

AIMSweb growth norms. Student N is an 8th grade male. His initial AIMSweb fall benchmarking score of 127 WRC fell at the 29th percentile compared to grade-level

peers, which is classified as the Average (26th – 75th percentiles) range by the AIMSweb Growth Norms chart. Student N's fall to winter growth ROI was -0.53, which puts him in the 5th percentile of growth within the Average range for the baseline timeframe. Student N's winter to spring growth ROI was 0.65, which puts him in the 65th percentile of growth within the Average range for the intervention timeframe. Student N had a growth percentile gain of 60 percentile points relative to grade-level peers within the same initial score category (Average).

Student N's ROI was negative during the baseline phase, and positive during the intervention phase. Student N moved from the 5th percentile of growth in the Average range to the 65th percentile of growth, demonstrating more growth than similar peers.

Visual inspection. Student N experienced no change in means across phases; his baseline mean score of words read correctly was 123.18 WRC, while his intervention mean score of words read correctly was 123.73 WRC (a difference of 0.55 WRC). A decrease in level occurred between phases. A change in trend occurred, with the decelerating slope of the baseline trendline to changing to an accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; 0/20 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 0%, indicating unreliable treatment effect.

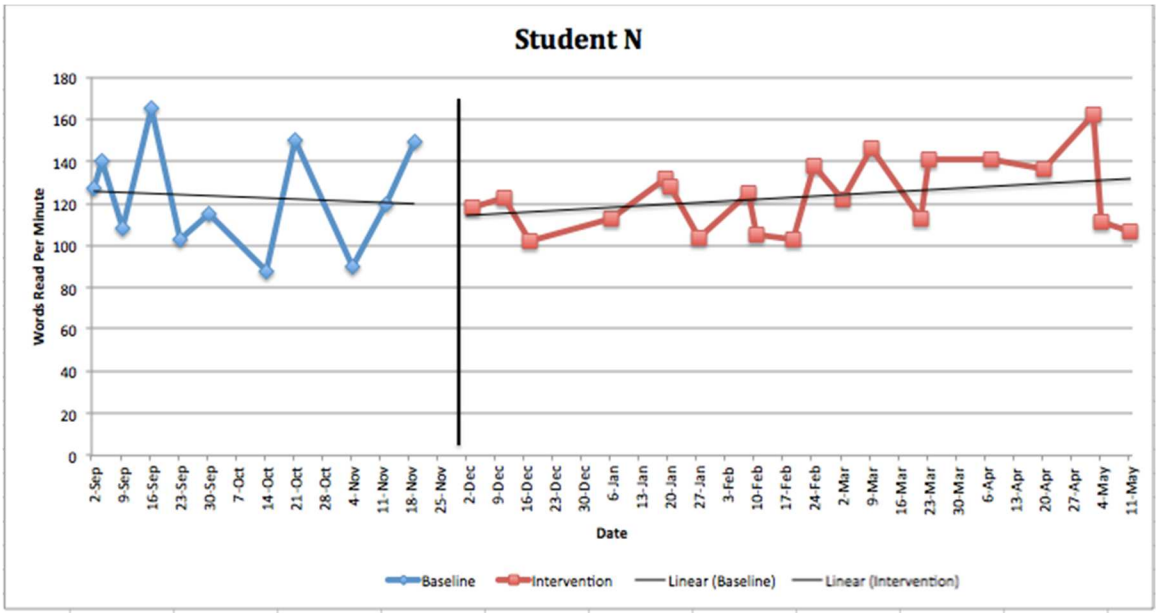

Figure 12. Student N Progress Monitoring Data

In summary, a positive change occurred in the slope of Student N's trendline during the intervention phase. Student N did not experience a change in means (+0), and as 100% of the data overlaps between phases, the effect of the intervention is unreliable.

Student O

AIMSweb growth norms. Student O is an 8th grade female. Her initial AIMSweb fall benchmarking score of 53 WRC fell below the 1st percentile compared to grade-level peers, which is classified as the Very Low (≤10th %ile) range by the AIMSweb Growth Norms chart. Student O's fall to winter growth ROI was -0.03, which puts her in the 5th percentile of growth within the Very Low range for the baseline timeframe. Student O's winter to spring growth ROI was 0.88, which puts her in the 65th percentile of growth within the Very Low range for the intervention timeframe. Student O had a growth

percentile gain of 60 percentile points relative to grade-level peers within the same initial score category (Very Low).

Student O's ROI was negative during the baseline phase, and positive during the intervention phase. Student O moved from the 5th percentile of growth in the Very Low range to the 65th percentile of growth, demonstrating more growth than similar peers.

Visual inspection. Student O experienced no change in means across phases; her baseline mean score of words read correctly was 59.58 WRC, while her intervention mean score of words read correctly was 60.00 WRC (a gain of 0.42 WRC). A decrease in level occurred between phases. A change in trend occurred, with the decelerating slope of the baseline trendline to changing to an accelerating slope during the intervention period. Latency of change was slow. Percentage of non-overlapping data between baseline and intervention periods was low; 1/21 intervention scores are higher than the highest score obtained during the baseline period, resulting in a POD percentage of 5%, indicating unreliable treatment effect.

In summary, a positive change occurred in the slope of Student O's trendline during the intervention phase. Student O did not experience a change in means (+0), and as 95% of the data overlaps between phases, the effect of the intervention is unreliable.

Overall, 12 out of the 13 students had a positive rate of improvement as measured by AIMSweb progress monitoring during the intervention period, but only ten out of the thirteen students increased their rate of improvement as compared to peers in the same AIMSweb Growth percentile at the start of the year. Eleven out of 13 students had a positive change in mean scores during the intervention period. However, because all

students' weekly progress monitoring data overlapped more than was acceptable, treatment outcomes are described as unreliable (with one being questionable).

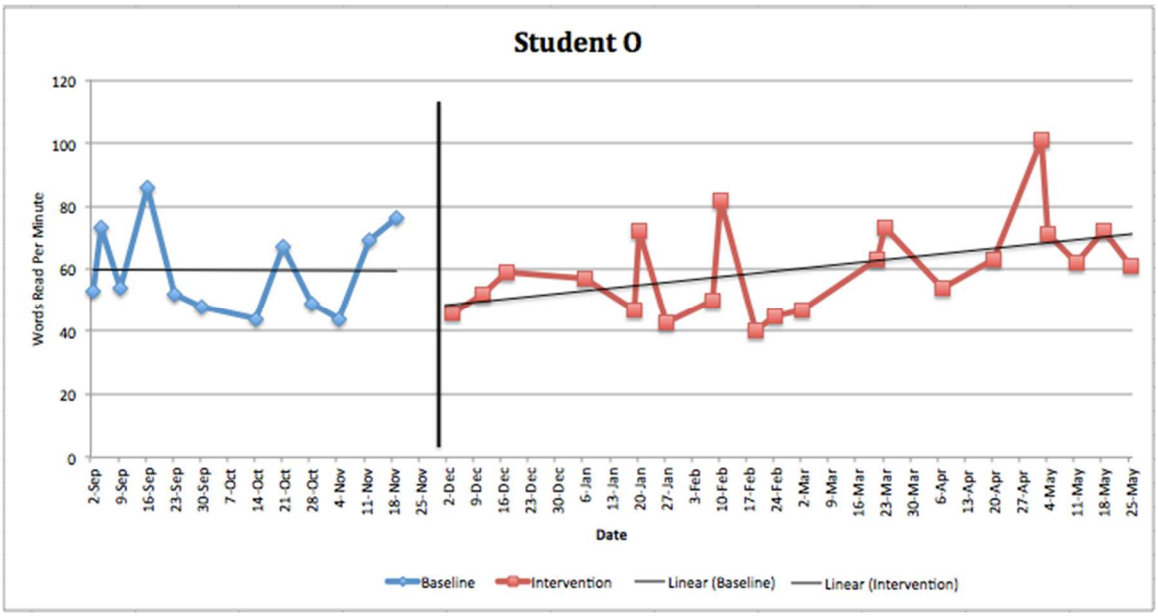

Figure 13. Student O Progress Monitoring Data

Research Question 2

To what extent does the Corrective Reading Comprehension program improve student reading growth as measured by MAP Reading assessment data?

An analysis of each student's MAP Reading test data from Fall, Winter and Spring testing sessions was conducted in order to examine each student's growth over the course of the year. In Table 4, the actual yearly RIT point growth made by each student on the MAP Reading test was compared to the projected RIT point growth calculated by the MAP Reading test. In Table 5, individual student percentile gain over the course of the year was inspected in order to determine the amount of progress made as compared to a national sample of same-grade level peers.

Table 4

Student MAP Reading Test Scores

2015-2016 MAP Reading Test Scores	Student A	Student C	Student D	Student F	Student G	Student H	Student I	Student J	Student K	Student L	Student M	Student N	Student O
Student Grade Level	6	6	6	7	7	7	7	7	7	8	8	8	8
Fall RIT	166	199	192	195	199	200	177	208	209	197	201	188	190
Winter RIT	163	187	197	199	199	198	166	206	205	204	193	190	189
Spring RIT	173	186	196	203	197	194	168	204	213	205	201	193	194
Fall-Winter RIT Growth	-3	-12	5	4	0	-2	-11	-2	-4	7	-8	2	-1
Winter-Spring RIT Growth	10	-1	-1	4	-2	-4	2	-2	8	1	8	3	5
RIT Growth for Year	7	-13	4	8	-2	-6	-9	-4	4	8	0	5	4
MAP Yearly Growth Projection	11	6	7	6	6	5	8	4	4	6	5	7	6
Actual v. Projected Growth Point Difference of:	-4	-19	-3	2	-8	-11	-17	-8	0	2	-5	-2	-2

Table 5

Student MAP Reading Test Percentiles

2015-2016 MAP Reading Test Percentiles (%ile)	Student A	Student C	Student D	Student F	Student G	Student H	Student I	Student J	Student K	Student L	Student M	Student N	Student O
Student Grade Level	6	6	6	7	7	7	7	7	7	8	8	8	8
Fall National %ile	1	21	10	10	16	17	1	34	36	10	15	3	4
Winter National %ile	1	3	12	12	12	10	1	23	21	16	5	3	3
Spring National %ile	1	3	9	16	8	6	1	17	37	17	11	4	5
Fall-Winter %ile Growth	0	-18	2	2	-4	-7	0	-11	-15	6	-10	0	-1
Winter-Spring %ile Growth	0	0	-3	4	-4	-4	0	-6	16	1	6	1	2
%ile Growth for Year	0	-18	-1	6	-8	-11	0	-17	1	7	-4	1	1

Student A grew 7 RIT points over the course of the year, but fell short of projected growth (11 RIT points). Student A did not make growth as compared to peers, remaining at the 1st percentile over the course of the year.

Student C grew -13 RIT points over the course of the year, falling short of projected growth (6 RIT points). Student C did not make growth as compared to peers, falling 18 percentile points over the course of the year.

Student D grew 4 RIT points over the course of the year, falling short of projected growth (7 RIT points). Student D did not make growth as compared to peers, falling one percentile point over the course of the year.

Student F grew 8 RIT points over the course of the year, exceeding projected growth (6 RIT points). Student F made growth as compared to peers, gaining 6 percentile points over the course of the year.

Student G grew -2 RIT points over the course of the year, falling short of projected growth (6 RIT points). Student G did not make growth as compared to peers, falling 8 percentile points over the course of the year.

Student H grew -6 RIT points over the course of the year, falling short of projected growth (5 RIT points). Student H did not make growth as compared to peers, falling 11 percentile points over the course of the year.

Student I grew -9 RIT points over the course of the year, falling short of projected growth (8 RIT points). Student I did not make growth as compared to peers, remaining at the 1st percentile over the course of the year.

Student J grew -4 RIT points over the course of the year, falling short of projected growth (4 RIT points). Student J did not make growth as compared to peers, falling 17 percentile points over the course of the year.

Student K grew 4 RIT points over the course of the year, meeting projected growth (4 RIT points). Student K made growth as compared to peers, gaining 1 percentile point over the course of the year.

Student L grew 8 RIT points over the course of the year, exceeding projected growth (6 RIT points). Student L made growth as compared to peers, gaining 7 percentile points over the course of the year.

Student M grew 0 RIT points over the course of the year, falling short of projected growth (5 RIT points). Student M did not make growth as compared to peers, falling 4 percentile points over the course of the year.

Student N grew 5 RIT points over the course of the year, falling short of projected growth (7 RIT points). Student N made growth as compared to peers, gaining 1 percentile point over the course of the year.

Student O grew 4 RIT points over the course of the year, falling short of projected growth (6 RIT points). Student O made growth as compared to peers, gaining 1 percentile point over the course of the year.

Student F and Student L each made two more points of growth than was projected by the MAP Reading test. Student K met projected growth. Student F, Student L and Student K also made growth relative to their national peers, as evidenced by growth in percentile rank from Fall to Spring (+6, +1, and +7 percentile points, respectively). While

Student N and Student O both grew in RIT score and made growth relative to their national grade level peers (as evidenced by a gain of one percentile point, each), they did not meet projected growth expectations. Student D grew four points on the MAP Reading test, but did not meet projected growth and did not grow relative to peers (loss of one percentile point). Student A grew 7 points on the MAP Reading test, but did not meet projected growth and did not grow relative to peers (remaining at the 1st percentile). All other students did not meet projected growth, and did not make gains compared to national peers.

In summary, three students met or exceeded projected RIT score growth, and grew relative to peers; two students grew in RIT score and grew relative to peers, but did not meet projected growth; two students grew in RIT score, but did not meet projected growth and did not grow relative to peers; leaving six out of the total thirteen students who did not show growth over the course of the year as measured by the MAP test.

When comparing data across measures, more students demonstrated growth as measured by R-CBM data than by MAP Reading test data, and more students showed growth relative to AIMSweb Growth Norm peers, rather than relative to MAP Reading test peers (summarized in Table 6).

Table 6

Comparison of Student R-CBM and RIT Growth

Student	AIMSweb R-CBM		MAP Reading RIT		
	Positive trendline?	More growth than peers?	Growth in RIT score?	Met projected ROT growth?	Growth relative to peers?
A	Yes	No	Yes	No	No
C	Yes	Yes	No	No	No
D	Yes	Yes	Yes	No	No
F	Yes	Yes	Yes	Yes	Yes
G	Yes	Yes	No	No	No
H	Yes	Yes	No	No	No
I	No	No	No	No	No
J	No	No	No	No	No
K	Yes	Yes	Yes	Yes	Yes
L	Yes	Yes	Yes	Yes	Yes
M	Yes	Yes	No	No	No
N	Yes	Yes	Yes	No	Yes
O	Yes	Yes	Yes	No	Yes

The three students (Student F, Student K, and Student L) who met or exceeded projected RIT score growth on the MAP Reading test and also grew relative to peers also had positive trendline changes in R-CBM data and showed more growth than similar peers as when compared to AIMSweb Growth Norms. Two students (Student N and Student O) who both made growth in MAP Reading RIT score and as relative to peers also had positive trendline changes in R-CBM data and showed more growth than similar peers as when compared to AIMSweb Growth Norms. One student (Student D) grew in MAP Reading RIT score, had positive trendline changes in R-CBM data, and showed more growth than similar peers as when compared to AIMSweb Growth Norms. One student (Student A) made growth in MAP Reading RIT score and had positive trendline changes in R-CBM data, but did not show growth relative to similar peers as when

compared to AIMSweb Growth Norms. Four students (Student C, Student G, Student H, and Student M) all had positive trendline changes in R-CBM data and showed more growth than similar peers as when compared to AIMSweb Growth Norms, but did not grow in RIT score on the MAP Reading test. Two students (Student I and Student J) showed negative trendline changes in R-CBM data and less growth than similar peers when compared to AIMSweb Growth Norms, and also did not show growth in RIT score on the MAP Reading test.

Research Question 3

How acceptable was the Corrective Reading Comprehension program to students?

As reported above, the number of surveys completed was less than expected due to participant attrition over the summer months. One out of the three sixth grade participants completed the survey, and five out of the six seventh grade participants completed the survey. Students were given a ten-question survey and asked to respond on a six point Likert scale, with 1 being *Strongly Disagree*, 2 being *Disagree*, 3 being *Slightly Disagree*, 4 being *Slightly Agree*, 5 being *Agree*, and 6 being *Strongly Agree*. Student answers will be examined individually and by grade level.

Student C's overall survey response score fell in the *Slightly Agree* range.

Table 7

6th Grade Student Survey Responses

Student Questionnaire	Student C	Description
1. This reading program helped me be a better reader.	6	Strongly Agree
2. I understand more of what I read now because of this program.	5	Agree
3. I liked participating in this reading program.	3	Slightly Disagree
4. My teacher did a good job teacher my class with this program.	6	Strongly Agree
5. I would like to have this program again next year.	2	Disagree
6. I did not like participating in this reading program.	3	Slightly Disagree
7. This reading program could help other students to be better readers.	6	Strongly Agree
8. I had fun doing this program with my class and teachers.	5	Agree
9. This program was too hard for me.	3	Slightly Disagree
10. I like reading more because of this program.	3	Slightly Disagree
Overall Answer Average:	4.2	Slightly Agree

Student C *Strongly Agree[d]* the program helped him to be a better reader, that his teacher did a good job teaching the program, and that the program could help other students to be better readers. He *Agree[d]* that he understands more of what he reads now because of the program, and that he had fun doing the program. Student C *Slightly Disagree[d]* that he liked participating in the program, and that he did not like participating in the program. Student C also *Slightly Disagree[d]* that the program was too hard for him, and that he liked reading more because of the program. Student C *Disagree[d]* that he would like to have the program again next year.

In summary, Student C believes the program helped him be a better reader and to understand more of what he reads; he felt the program was not too hard for him, however, he does not like reading anymore because of the program, and does not want to participate in it again. Student C did not show growth as measured by the MAP Reading test, but did show growth (both in average mean score, positive trend, and as compared to similar peers) on weekly progress monitoring passages.

In summary, the 6th grade student who took the survey responded that it benefitted him and helped him to become a better reader. This student also showed growth as measured by weekly data collection. Unfortunately, with only one response, conclusions about the acceptability of the program for the 6th grade students are limited.

Overall, the 7th grade students who participated in the survey *Agree[d]* that the reading program could help other students to be better readers and *Agree[d]* that their teacher did a good job teaching the program. Students *Slightly Agree[d]* that the reading program helped them to become better readers, that they understood more of what they read because of the program, that they liked the program, that they would like to have the program again next year, and that they had fun doing the program with their class. Overall, 7th grade students *Slightly Disagree[d]* that they liked reading more because of the program, and *Disagree[d]* both that the program was too hard for them and that they did not like the program.

Table 8

7th Grade Student Survey Responses

Student Questionnaire	Student Response					Student Average Response	Description
	F	G	H	J	K		
1. This reading program helped me be a better reader.	4	3	3	5	5	4.0	Slightly Agree
2. I understand more of what I read now because of this program.	4	6	4	5	4	4.6	Slightly Agree
3. I liked participating in this reading program.	4	1	5	5	6	4.2	Slightly Agree
4. My teacher did a good job teacher my class with this program.	5	6	6	5	6	5.6	Agree
5. I would like to have this program again next year.	6	1	6	4	4	4.2	Slightly Agree
6. I did not like participating in this reading program.	4	4	2	2	1	2.6	Disagree
7. This reading program could help other students to be better readers.	5	4	5	5	6	5.0	Agree
8. I had fun doing this program with my class and teachers.	2	4	6	5	6	4.6	Slightly Agree
9. This program was too hard for me.	4	1	3	2	2	2.4	Disagree
10. I like reading more because of this program.	4	2	1	5	4	3.2	Slightly Disagree
Overall Answer Average:	4.2	3.2	4.1	4.3	4.4	4.04	Slightly Agree

Student F *Strongly Agree[d]* that she would like to have the program again next year. She *Agree[d]* that her teacher did a good job teaching the program and that the program could help other students to be better readers. Student F *Slightly Agree[d]* that the program helped her to be a better reader, that she understands more of what she reads now because of the program, that she liked participating in the program, that she disliked

participating in the program, that the program was too hard for her, and that she likes reading more because of the program. Student F *Disagree[d]* that she had fun doing the program with her class and teacher.

In summary, Student F believes that the program helped her to become a better reader, that her teacher did a good job, and that she likes reading more because of the program and would like to have it again; but she did not have fun doing the program with her class and teacher. Student F did show growth as measured by the MAP Reading test (met growth projection, grew in RIT points, and grew in percentile as compared to peers) and also showed growth (in average mean score, positive trend, and as compared to similar peers) on weekly progress monitoring passages.

Student G *Strongly Agree[d]* that he understands more of what he reads now because of the program, and that his teacher did a good job teaching the program. He *Slightly Agree[d]* that he did not like participating in the program, that the program could help other students to be better readers, and that he had fun doing the program. Student G *Slightly Disagree[d]* that the program helped him to be a better reader, and *Disagree[d]* that he likes reading more because of the program. Student G *Strongly Disagree[d]* that he liked the program, that he would like to have the program again, and that the program was too hard for him.

In summary, Student G believes he now understands more of what he reads, found the program easy, and thought his teacher did a good job; but he did not like participating in the program (even though it was fun) and would not like to have it again. Student G did not show growth as measured by the MAP Reading test, but did show

growth (in average mean score, positive trend, and as compared to similar peers) on weekly progress monitoring passages.

Student H *Strongly Agree[d]* that her teacher did a good job teaching the program, that she would like to have the program again, and that she had fun doing the program with her class and teacher. She *Agree[d]* that she liked participating in the program, and that the program could help other students to be better readers. Student H *Slightly Agree[d]* that she understands more of what she reads now because of the program. She *Slightly Disagree[d]* that the program helped her to be a better reader, and that it was too hard for her. She *Disagree[d]* that she did not like participating in the program, and *Strongly Disagree[d]* that she likes reading more now because of the program.

In summary, Student H had fun participating in the program, thought her teacher did a good job, and would like to have the program again; she liked participating in the program even though she does not like reading anymore because of it. Student H did not show growth as measured by the MAP Reading test, but did show growth (in average mean score, positive trend, and as compared to similar peers) on weekly progress monitoring passages.

Student J *Agree[d]* that the program helped him to be a better reader, that he understands more of what he reads now because of the program, that he liked participating in the program, that his teacher did a good job teaching the program, that the program could help other students to be better readers, that he had fun doing the program, and that he likes reading more because of the program. He *Slightly Agree[d]* that he

would like the program again next year, and *Disagree[d]* that he did not like participating in the program and that the program was too hard for him.

In summary, Student J believes he is a better reader because of the program and that he likes reading more because of the program. He also believes that the program can help others to be better readers, and that his teacher did a good job teaching the program, and did not think the program was too hard. Student J did not show growth as measured by the MAP Reading test, but did show growth (in average mean score and positive trend, but not as compared to peers) on weekly progress monitoring passages.

Student K *Strongly Agree[d]* that she liked participating in the program, that her teacher did a good job teaching the program, that the program could help other students to be better readers, and that she had fun doing the program with her class and teacher. She *Agree[d]* that the program helped her to be a better reader. She *Slightly Agree[d]* that she understands more of what she reads now because of the program, that she would like to have the program again next year, and that she likes reading more because of the program. Student K *Disagree[d]* that the program was too hard for her, and *Strongly Disagree[d]* that she did not like participating in the program.

In summary, Student K liked participating in the program and felt that the program could help other students be better readers; she also thought her teacher did a good job teaching and that the program was fun. The program was not too hard for her, and she felt it helped her to be a better reader. Student K showed growth as measured by the MAP Reading test (met growth projection, grew in RIT points, and grew in percentile

as compared to peers) and also showed growth (in average mean score, positive trend, and as compared to similar peers) on weekly progress monitoring passages.

In summary, students who took the survey responded on average that the reading program benefitted them (albeit *Slightly)*. While answers differed on whether the program was fun, or whether students would like to have it again next year, the majority of students responded that they understand more of what they read because of the program. The majority of students also reported that the program could help other students to be better readers, indicating acceptability of and social validity (i.e., "it helped me, it can help others") for the program.

Research Question 4

How acceptable was the Corrective Reading Comprehension program to teachers?

As reported above, the number of surveys completed was less than expected due to participant attrition over the summer months. The 6th grade teacher participant and the 8th grade teacher participant each completed the survey. Teachers were given a 24-question survey, and were asked to respond on a six point Likert scale, with 1 being *Strongly Disagree*, 2 being *Disagree*, 3 being *Slightly Disagree*, 4 being *Slightly Agree*, 5 being *Agree*, and 6 being *Strongly Agree*. Teacher answers will be examined together.

Table 9

Teacher Survey Responses

Teacher Questionnaire	6th Grade	8th Grade	Average	Description
1. This is an acceptable intervention for students with reading comprehension issues.	5	5	5	Agree
2. Most teachers would find this intervention appropriate for reading comprehension.	4	5	4.5	Slightly Agree
3. This intervention should prove effective in changing reading comprehension issues.	4	5	4.5	Slightly Agree
4. I would suggest the use of this intervention to other teachers.	5	4	4.5	Slightly Agree
5. The student's problem behavior is severe enough to warrant use of this intervention.	6	5	5.5	Agree
6. Most teachers would find this intervention suitable for the problem behavior.	6	4	5	Agree
7. I would be willing to use this again in the classroom setting.	5	5	5	Agree
8. This intervention does *not* result in negative side effects for the student.	5	5	5	Agree
9. The intervention would be appropriate for a variety of students.	4	5	4.5	Slightly Agree
10. The intervention is consistent with others I have used in classroom settings.	2	4	3	Slightly Disagree
11. The intervention is a good way to handle the student's problem behavior.	5	5	5	Agree
12. The intervention is reasonable for the problem behavior described.	5	4	4.5	Slightly Agree
13. I like the procedures used in the intervention.	5	4	4.5	Slightly Agree
14. This intervention was a good way to handle the problem behavior.	5	5	5	Agree

15. Overall, the intervention would be beneficial for the student.	5	5	5	Agree
16. The intervention would quickly improve the student's problem behavior.	4	5	4.5	Slightly Agree
17. The intervention would produce lasting improvement in the problem behavior.	4	4	4	Slightly Agree
18. The intervention would improve the student's reading comprehension to the point that it would not noticeably deviate from other student's reading comprehension abilities.	3	4	3.5	Slightly Disagree
19. Soon after using the intervention, the teacher noticed a positive change in the problem behavior.	4	4	4	Slightly Agree
20. The student's behavior will remain improved even after the intervention is discontinued.	4	4	4	Slightly Agree
21. Using the intervention should not only improve the child's behavior in the classroom, but in other settings as well.	5	4	4.5	Slightly Agree
22. When comparing this student's skills to those of a grade level peer, before and after use of the intervention, the student and peer's skills will be more alike after use of the intervention.	4	4	4	Slightly Agree
23. The intervention should produce enough improvement in the child's skills so that the problem behavior is no longer an issue in the classroom.	4	3	3.5	Slightly Disagree
24. Other behaviors related to the problem behavior are also likely to be improved by this intervention.	5	4	4.5	Slightly Agree
Average Response Choice:	4.50	4.42	4.46	Slightly Agree

Overall, both teachers agreed that the reading program improved their students' reading skills. Teachers also agreed that post-intervention, reading skill was still an issue for students and that the program did not remediate all of the skill deficits present. Overall, teachers responded that the reading program was a good intervention for

students with reading comprehension deficits, and that they would use it again. Unfortunately, specific conclusions are difficult to draw about the impact of the teacher's acceptability about the program as tied to student progress, as students in the 6th grade class did not consistently show growth on any one measure. Specific conclusions about the 8th grade data are also difficult to draw, with the only consistency in the data being that all 8th grade participants increased their AIMSweb growth percentiles.

CHAPTER V

DISCUSSION

The purpose of this research was to examine how much impact a two-trimester implementation of the *Corrective Reading Comprehension* program had upon the reading skills of special education students in small group ELA classes. The goal was to gather data on the effectiveness of the *Corrective Reading Comprehension* program as an intervention for middle school students with specific learning disability, as measured by two different types of data, and supported by student and teacher acceptability measures. Research questions consisted of:

1. To what extent does the *Corrective Reading Comprehension* program improve student reading growth as measured by weekly R-CBM progress monitoring data?
2. To what extent does the *Corrective Reading Comprehension* program improve student reading growth as measured by MAP Reading assessment data?
3. How acceptable was the *Corrective Reading Comprehension* program to students?
4. How acceptable was the *Corrective Reading Comprehension* program to teachers?

In summary, while many students did show growth during the intervention period, no one assessment or analysis consistently showed growth for all students. Twelve out of

the thirteen student participants had a positive rate of improvement as measured by AIMSweb progress monitoring during the intervention period, but only ten out of the thirteen students increased their rate of improvement as compared to peers in the same AIMSweb Growth percentile at the start of the year. Eleven out of 13 students had a positive change in mean scores during the intervention period, but because all students' weekly progress monitoring data overlapped more than was acceptable, treatment outcomes were described as unreliable (with one being questionable). Seven of thirteen student participants grew in MAP Reading RIT score, and five out of the thirteen grew in MAP score percentile (relative to peers), but only three students met or exceeded their projected MAP Reading RIT growth for the year.

In order to determine if one assessment was a better measure of growth than another, the purpose of each type of assessment must be reviewed. AIMSweb R-CBM passages are intended to indicate a student's overall growth in general reading skill, which means that scores could increase due to an increase in a student's decoding skills, reading fluency rate, vocabulary knowledge, or reading comprehension. MAP Reading is intended to pinpoint a student's reading achievement level by measuring word meaning, literal comprehension, interpretive comprehension and evaluative comprehension. Through that lens, it seems that while the majority of students may have become better readers over the course of the year, the majority of students in the study did not improve their reading comprehension achievement over the course of the year. Additionally, because MAP projected growth scores are calculated so that 50-60% of students assessed achieve projected growth, the fact that only 23% of students participating in the study

made projected growth (or average gains) on the MAP Reading test is disconcerting. If MAP is the better measure of a student's reading comprehension, and less than half of participating students made progress compared to peers when being given the *Corrective Reading Comprehension* intervention (an intensive program designed to improve comprehension), the obvious conclusion is that the intervention, as implemented in this study, did not significantly impact student reading comprehension.

Nevertheless, student survey responses indicated that students believed they were better readers because of the program, and felt it could also help other students to be better readers. Students also believed their teachers did a good job teaching them with the program, but students did not feel the program helped them to 'like' reading any more than they already did. Teachers reported that they found the program to address the reading needs of their students, but that it did not remediate all the issues with reading that they saw in their students. Results of the acceptability survey were similar to findings presented by McDaniel et al. (2010), in that student participants recognized their own need for improvement in reading and teachers found the program helpful in teaching their students.

In reflecting upon the research regarding best practice instruction for middle school students with significant reading deficits and the previous research completed on the *Corrective Reading* program, the somewhat mixed results (most students became better readers, yet did not measurably increase their reading comprehension skills) presented above are not surprising. Research clearly indicates that poor reading instruction is cumulative (Vaughn & Wanzek, 2014). Therefore, even when provided

with a curriculum that employs best practice teaching strategies and the resources to implement said program consistently, it is not feasible for student reading skill deficits to be remediated in a single year. As noted by Wanzek et al. (2011), it will take a considerable amount of resources and time to begin to fill the skill gaps that middle school students have developed over time.

While the *Corrective Reading* program meets criteria for systematic and explicit instruction in reading, the intensive instruction comes at a cost. If students are to be expected to spend 80 minutes of each academic school day engaged in remedial reading instruction (which would be the case should both *Corrective Reading Comprehension* and *Decoding* be used for instruction), the time for grade level content instruction is limited. Therefore, all teachers throughout a student's academic day must reinforce reading skills in order for students to make progress in reading across content areas. This will require teachers with the knowledge of best practice reading strategy instruction to coach, co-plan with, or co-teach with teachers who do not have training in the teaching of reading skills. It also seems fairly evident that providing intensive remedial reading instruction in middle school is more difficult than doing so earlier in a student's academic career, when the scheduling of the school day is more flexible and students have one or two teachers rather than six or eight. Essentially, due to the structure and constraints of a middle-school or secondary setting, the earlier in schools intensive instruction begins with *Corrective Reading*, the better.

Limitations and Suggestions for Future Research

Unfortunately, the limitations of this research study impacted the researcher's ability to draw definite conclusions about the effect of the intervention. The largest limitations of this study were that no intervention implementation integrity data was collected, the weakness of the AB design, and the fact that students continued to receive instruction in reading and writing during the other 40 minutes of the 80-minute English Language Arts block. In hindsight, data should have been collected on the number and dates of student absences, teacher absences, and whether the 40 minutes of *Corrective Reading* instruction did in fact occur on a daily basis. This would have enabled the researcher to analyze student progress with regard to the amount of instruction they had received, perhaps showing a correlation between the amount of instruction a student had received and their educational progress over time.

Due to the fact that no fidelity data was collected, this researcher is unsure how well teachers adhered to the script of the *Corrective Reading* Comprehension program or if it was taught for the full 40 minutes on a daily basis, and to what extent this may have impacted the progression of instruction. Additionally, inconsistent data collection also presented a limitation and threat to validity; if progress monitoring data points are skipped, a less reliable data sample (or potentially insufficient data sample) will end up being collected (Kazdin, 2011). Student and teacher absences also potentially impacted the fidelity of program instruction, both in teachers not being present to teach the daily lesson, and students missing lessons due to absences. A large number of teacher absences could have impacted the rate of a class's progression through the curriculum, since a

substitute teacher would have not had the training to be able to implement the *Corrective Reading Comprehension* program. Absences would then impact the schedule of instruction, as a class would no longer be able to progress through five lessons in five days (for example). A large number of student absences could also impact a student's mastery of the curriculum, as the continuity of instruction would be disrupted for that individual student as they were not present with the rest of the class to receive the instruction for that day.

In addition, data should have been kept by teachers on the pace of their class through the lessons of *Corrective Reading Comprehension.* During informal conversations with teachers, it was reported to this researcher that the instructional pace of the classes differed. While 7th and 8th grade classes progressed through 30 lessons during the intervention phase, the 6th grade class only progressed through 15 lessons. In questioning this, the 6th grade teacher reported to this researcher that she spent a large amount of time at the start of intervention implementation re-teaching lessons when students (in review, five out of the eight students in her class had non-SLD eligibilities such as Intellectual Disability, Other Health Impairment, and Autism) were not able to show mastery during intervention. She noted that their struggles with mastery had definitely slowed her instructional pace with the class. She also noted that while she and the *Corrective Reading* consultant had worked together over the course of the year to increase the pace, some students in her class were simply having a difficult time with the program and were not able to show mastery as quickly as other students. With that in mind, an additional limitation is that student characteristics within the classes to whom

this program is presented may also impact the progression of instruction, and therefore all student progress. Had the 6th grade class been primarily students with SLD eligibilities, perhaps the teacher would have been able to maintain a pace similar to the 7th and 8th grade classes (which had a majority of students with SLD in each class).

The AB design of this research was also a limitation, as it limited the researcher's ability to attribute gains in performance to the intervention itself. The *Corrective Reading* intervention was at no point withdrawn and reinstated (as is typically the done with single case research design) (Kazdin, 2011). Without a second baseline phase, there is not an opportunity to observe changes in student data when the intervention is removed for a period of time, and then reinstated. The AB design limited the researcher's ability to attribute gains in performance to the intervention itself, as there was also no opportunity to engage in the hypothesis testing and performance prediction typically involved with an ABAB single case research design (Kazdin, 2011). If a second baseline had been implemented, and a second intervention period implemented, the resulting data may have been more clearly tied to *Corrective Reading* program implementation. This lack of replication also introduces a potential inability for the examiner to draw a conclusion regarding the effect of the intervention due variability in data across phases and unclear trend across phases, resulting in a mixed data pattern (Kazdin, 2011).

An additional limitation of this research is that students continued to receive reading and writing instruction outside of the *Corrective Reading* program from their Special Education teacher. Results of program implementation may have been clearer if students had only been receiving 40 minutes per day of instruction through the *Corrective*

Reading Comprehension program; however, they also received an additional 40 minutes of modified grade level English Language Arts curriculum on a daily basis. If *Corrective Reading Comprehension* was the one and only instructional tool being utilized with students, results could be considered a direct reflection of that instruction. However, in this case, it is possible that gains in student reading ability as reflected in the data could have also been due to the additional instruction occurring with students outside of the intervention program. Unfortunately, supplanting students' reading instruction was not practical in this case, as students (and teachers) were held accountable for progress through a modified grade-level curriculum during their English Language Arts and could not simply abandon the school's core instructional program. Unfortunately, due to the amount of instructional time and resources needed to properly implement the *Corrective Reading* program, it may not always be practical to implement with the intensity that is needed for students to be able to make significant progress in the middle school setting. Schools in this day and age of the Common Core State Standards expect that reading and writing be instructed throughout a student's day (rather than solely in English Language Arts), so it could potentially be very difficult to create a situation for students where their only source of reading instruction is *Corrective Reading*. The one suggestion this researcher has with regard to eliminating the impact of alternate instruction would be to use *Corrective Reading* as the program for instruction during a summer class for students with SLD, and collect data under those conditions.

In future research, increasing the longevity of program instruction and data collection may also have an impact on the researcher's ability to draw conclusions from

the data. 6th grade students in this study only progressed through fifteen of the sixty-five lessons in *Corrective Reading Comprehension Level A*, while 7th and 8th grade students only progressed through 30 of the 65 lessons. Had the research project been set up to collect data until students had completed all 65 lessons in *Level A*, or even finished with all three levels (Levels A, B1, B2, and C), the ability of the researcher to draw conclusions from the results may have been different (though feasibility of this also would have depended highly upon each teacher's instructional pace and the amount of time students were continuously enrolled in one educational setting).

Conclusion

It is this researcher's opinion that the results of this study reflect the difficulty of finding an instructional program that meets the needs of all students within a class and is intensive enough for students to make a significant amount of progress in a short timeframe. Generally, students made more progress with the *Corrective Reading Comprehension* intervention in place than during baseline, but this was not the case for all students. Most students also showed growth in reading skill over the course of the year when compared to like peers, as evidenced by the AIMSweb Growth Norms. It is therefore this researcher's opinion that those two qualifications indicate successful intervention implementation, and that AIMSweb R-CBM passages are a better tool than the MAP Reading test for tracking student growth during the *Corrective Reading Comprehension* program.

APPENDIX A

QUESTIONNAIRES

Student Questionnaire

Student Questionnaire

***Corrective Reading, Comprehension* Intervention**

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1.	This reading program helped me be a better reader.	1	2	3	4	5	6
2.	I understand more of what I read now because of this program.	1	2	3	4	5	6
3.	I liked participating in this reading program.	1	2	3	4	5	6
4.	My teacher did a good job teaching my class with this program.	1	2	3	4	5	6
5.	I would like to have this program again next year.	1	2	3	4	5	6
6.	I did not like participating in this reading program.	1	2	3	4	5	6
7.	This reading program could help other students to be better readers.	1	2	3	4	5	6
8.	I had fun doing this program with my class and teacher.	1	2	3	4	5	6
9.	This program was too hard for me.	1	2	3	4	5	6
10.	I like reading more because of this program.	1	2	3	4	5	6

Teacher Questionnaire

Teacher Questionnaire

***Corrective Reading, Comprehension* Intervention**

Problem Behavior: Defined as having significant issues with reading comprehension.

		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1.	This is an acceptable intervention for students with reading comprehension issues.	1	2	3	4	5	6
2.	Most teachers would find this intervention appropriate for reading comprehension.	1	2	3	4	5	6
3.	This intervention should prove effective in changing reading comprehension issues.	1	2	3	4	5	6
4.	I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5.	The student's problem behavior is severe enough to warrant use of this intervention.	1	2	3	4	5	6
6.	Most teachers would find this intervention suitable for the problem behavior.	1	2	3	4	5	6
7.	I would be willing to use this again in the classroom setting.	1	2	3	4	5	6
8.	This intervention does *not* result in negative side effects for the student.	1	2	3	4	5	6
9.	The intervention would be appropriate for a variety of students.	1	2	3	4	5	6
10.	The intervention is consistent with others I have used in classroom settings.	1	2	3	4	5	6
11.	The intervention is a good way to handle the student's problem behavior.	1	2	3	4	5	6

12.	The intervention is reasonable for the problem behavior described.	1	2	3	4	5	6
13.	I like the procedures used in the intervention.	1	2	3	4	5	6
14.	This intervention was a good way to handle the problem behavior.	1	2	3	4	5	6
15.	Overall, the intervention would be beneficial for the student.	1	2	3	4	5	6
16.	The intervention would quickly improve the student's problem behavior.	1	2	3	4	5	6
17.	The intervention would produce lasting improvement in the problem behavior.	1	2	3	4	5	6
18.	The intervention would improve the student's reading comprehension to the point that it would not noticeably deviate from other student's reading comprehension abilities.	1	2	3	4	5	6
19.	Soon after using the intervention, the teacher noticed a positive change in the problem behavior.	1	2	3	4	5	6
20.	The student's behavior will remain improved even after the intervention is discontinued.	1	2	3	4	5	6
21.	Using the intervention should not only improve the child's behavior in the classroom, but in other settings as well.	1	2	3	4	5	6
22.	When comparing this student's skills to those of a grade level peer, before and after use of the intervention, the student and peer's skills will be more alike after use of the intervention.	1	2	3	4	5	6
23.	The intervention should produce enough improvement in the child's skills so that the problem behavior is no longer an issue in the classroom.	1	2	3	4	5	6
24.	Other behaviors related to the problem behavior are also	1	2	3	4	5	6

likely to be improved by this intervention.

APPENDIX B

CONSENT FORMS

Parent Consent Form

CONSENT FOR YOUR STUDENT TO PARTICIPATE IN A RESEARCH STUDY
Project Title: Corrective Reading and Middle School Students with Specific Learning Disability
Researcher(s): Diane Wallendjack
Faculty Sponsor: Dr. Markeda Newell

Introduction: You are being asked to give consent for your student to take part in a research study being conducted by Diane Wallendjack for a Doctoral Research Project under the supervision of Dr. Markeda Newell in the Department of Education at Loyola University of Chicago. Your student is being asked to participate because they have received instruction during their English Language Arts class this year with the reading curriculum 'Corrective Reading'. Please read this form carefully and ask any questions you may have before deciding whether you will allow your student to participate in the study.

Purpose: The purpose of this study is to determine the impact of the 'Corrective Reading' program upon student reading performance.

Procedures: If you agree for your student to be in the study, they will be asked to complete a 10-question survey that asks about how much they liked participating in the program, and whether they believe it helped them to become a better reader (a copy is attached for your review).

Risks/Benefits: There are no foreseeable risks involved in participating in this research beyond those experienced in everyday life. There are no direct benefits to you or your student from participation, but the results of this research will potentially help to inform future programming decisions for struggling middle school readers.

Confidentiality: The answers your student gives on the survey will be kept confidential and will only be accessible by this researcher. No identifying information will be collected as part of this survey, and students will be explicitly told NOT to write their names on their papers. All results will be stored on a password-protected computer or in a locked file cabinet. All results will be destroyed once the research project is complete.

Voluntary Participation: Participation in this study is voluntary. If you do not want your student to participate, they will still be given the option to take the survey, but their survey paper will be destroyed and will not be used in the research study. Students will also be asked to give consent prior to completing the survey; Students may refuse to take

the survey. If you give consent and your student does not, your student's answers will not be used in the research study.

Contacts and Questions: If you have questions about this research study, please feel free to contact Diane Wallendjack at dwallendjack@luc.edu or the faculty sponsor, Dr. Newell at mnewell2@luc.edu. If you have questions about your rights as a research participant, you may contact the Loyola University Office of Research Services at (773) 508-2689.

Statement of Consent: Your signature below indicates that you have read the information provided above, have had an opportunity to ask questions, and agree to allow your student to participate in this research study**.** You will be given a copy of this form to keep for your records.

_____ _____

Participant's Signature **Date**

_____ _____

Researcher's Signature **Date**

Student Consent Form

CONSENT TO PARTICIPATE IN A RESEARCH STUDY
Project Title: Corrective Reading and Middle School Students with Specific Learning Disability
Researcher(s): Diane Wallendjack
Faculty Sponsor: Dr. Markeda Newell

Introduction: You are being asked to give your consent to take part in a research study being conducted by Diane Wallendjack for a Doctoral Research Project under the supervision of Dr. Markeda Newell in the Department of Education at Loyola University of Chicago. You are being asked to participate because you have participate in the reading curriculum 'Corrective Reading' in your English Language Arts class this year. Please read this form carefully and ask any questions you may have before deciding whether you will participate in the study.

Purpose: The purpose of this study is to determine the impact of the 'Corrective Reading' program upon student reading performance.

Procedures: If you agree to participate in the study, you will be asked to answer 10 questions about how you liked *Corrective Reading*, and whether it helped you to be a better reader.

Risks/Benefits: There are no foreseeable risks involved in participating in this research beyond those experienced in everyday life. There are no direct benefits to you from participation, but the results of this research will potentially help to inform future programming decisions for struggling middle school readers.

Confidentiality: The answers you give on the survey will be kept confidential and will only be accessible by this researcher. No identifying information will be collected as part of this survey. All results will be stored on a password-protected computer or in a locked file cabinet. All results will be destroyed once the research project is complete.

Voluntary Participation: Participation in this study is voluntary. If you do not want to participate, you do not have to.

Contacts and Questions: If you have questions about this research study, please feel free to contact Diane Wallendjack at dwallendjack@luc.edu or the faculty sponsor, Dr. Newell at mnewell2@luc.edu. If you have questions about your rights as a research participant, you may contact the Loyola University Office of Research Services at (773) 508-2689.

Statement of Consent: Your signature below indicates that you have read the information provided above, have had an opportunity to ask questions, and agree to participate in this research study**.** You will be given a copy of this form to keep for your records.

Participant's Signature	**Date**
Researcher's Signature	**Date**

Teacher Consent Form

CONSENT TO PARTICIPATE IN A RESEARCH STUDY
Project Title: Corrective Reading and Middle School Students with Specific Learning Disability
Researcher(s): Diane Wallendjack
Faculty Sponsor: Dr. Markeda Newell

Introduction: You are being asked to give your consent to take part in a research study being conducted by Diane Wallendjack for a Doctoral Research Project under the supervision of Dr. Markeda Newell in the Department of Education at Loyola University of Chicago. You are being asked to participate because you have taught the reading curriculum 'Corrective Reading' in your English Language Arts class this year. Please read this form carefully and ask any questions you may have before deciding whether you will participate in the study.

Purpose: The purpose of this study is to determine the impact of the 'Corrective Reading' program upon student reading performance.

Procedures: If you agree to participate in the study, you will be asked to complete a 24-question survey that asks about how you liked teaching the program, and whether you believe the program helped your students to become better readers.

Risks/Benefits: There are no foreseeable risks involved in participating in this research beyond those experienced in everyday life. There are no direct benefits to you or your student from participation, but the results of this research will potentially help to inform future programming decisions for struggling middle school readers.

Confidentiality: The answers you give on the survey will be kept confidential and will only be accessible by this researcher. No identifying information will be collected as part of this survey. All results will be stored on a password-protected computer or in a locked file cabinet. All results will be destroyed once the research project is complete.

Voluntary Participation: Participation in this study is voluntary. If you do not want to participate, you do not have to.

Contacts and Questions: If you have questions about this research study, please feel free to contact Diane Wallendjack at dwallendjack@luc.edu or the faculty sponsor, Dr. Newell at mnewell2@luc.edu. If you have questions about your rights as a research participant, you may contact the Loyola University Office of Research Services at (773) 508-2689.

Statement of Consent: Your signature below indicates that you have read the information provided above, have had an opportunity to ask questions, and agree to participate in this research study**.** You will be given a copy of this form to keep for your records.

Participant's Signature	**Date**
Researcher's Signature	**Date**

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VITA

Diane Wallendjack is the oldest daughter of Mark and Teresa Wallendjack. She was born in Maryland on June 18, 1982. She currently resides in a suburb of Chicago with her soon-to-be fiancé and their two dogs. Diane attended public schools in Montgomery County, Maryland. In 2004 she graduated from Clemson University with a Bachelor of Arts degree in Secondary Education. In 2009 she received a Master of Education degree from National-Louis University. In 2011 she earned an Education Specialist degree in School Psychology from National-Louis University. In 2017 she earned her Doctorate in Education in the field of School Psychology, with a concentration in Data Based Decision Making and Accountability from Loyola University Chicago.

Diane Wallendjack has worked in the field of education as a School Psychologist for the past six years. She is a Nationally Certified School Psychologist (NCSP), a member of the Illinois School Psychologists Association (ISPA), and a member of the National Association of School Psychologists (NASP). She has worked with students in early childhood through middle school, and is thoroughly enjoying her current full-time position at a middle school in the western suburbs of Chicago. Her on-going research interests include academic program evaluation, especially as related to the needs of students with significant academic skills deficits.

DOCTORAL RESEARCH PROJECT COMMITTEE

The Doctoral Research Project submitted by Diane L. Wallendjack has been read and approved by the following committee:

Markeda Newell, Ph.D., Director
Associate Professor, School of Education
Loyola University Chicago

Gina Coffee, Ph.D.
Associate Professor and School Psychology Program Chair, School of Education
Loyola University Chicago

Laura Swanlund, Ph.D.
Coordinator of School Psychology and PBIS
Community Consolidated School District 15