THE EFFECTS OF AN ORAL READING FLUENCY ACTIVITY ON RATES OF ORAL READING

A Thesis
Presented in Partial Fulfillment of the Requirements for The Degree Master of Arts in the Graduate School of The Ohio State University

By
Sarah Letitia Moore

* * * * *

The Ohio State University
2007

Master’s Examination Committee:                   Approved by:
Dr. Gwendolyn Cartledge, Advisor
Dr. Moira Konrad                                      ____________________________
                                          Advisor
                                      Graduate Program in Education
This study examined the effects of a fluency building activity on the levels of oral reading fluency in a group of six first and second grade students with multiple disabilities. It also examined the effects of student fluency on levels of comprehension. The reading fluency activity used a combination of word practice in isolation (word flashcards), model reading (teacher reads aloud as students follow along), guided practice (students read along with teacher), and partner reading (students take turns reading) to build fluency.

Students participated in the fluency activity in groups of two and were grouped according to skill level. Fluency and comprehension levels were assessed both before and after the study using the letter-word identification and reading fluency portions of the Woodcock-Johnson III Tests of Achievement (Woodcock, McGrew, & Mather, 2001). The students were assessed for levels of oral reading fluency during baseline and intervention sessions through 1-minute timed readings. The numbers of correct words the students were able to read during each 1-minute time period were tracked throughout the study. Students were assessed for comprehension through passage retells. After each 1-minute timed reading students were asked to retell what they had read. The number of words connected with the passage during the child’s retell were counted and documented.
The dependent variables in this study were the number of correct words read in 1-minute and the number of words students used to retell the passage. Results show that the students’ rates of oral reading fluency increased with the intervention. All six students demonstrated an increase in the number of words read during the 1-minute timed readings during the intervention. Students showed improvement on their W-J-III (Woodcock et al., 2001) reading fluency posttest scores following the conclusion of the study. Results also indicate that the students’ rates of comprehension increased along with their levels of reading fluency. Five out of the six students demonstrated an improvement in levels of comprehension when their levels of oral reading fluency increased.
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VITA

July 8, 1981.................................................................Born—Cleveland, OH

2003..............................................................................B.S., Ohio University
                                                      Athens, OH

2003-2007..............................................................Teacher,
                                                      Madison County Board of MR/DD
                                                      London, OH

2007-Present..........................................................Teacher,
                                                      Hilliard City Schools
                                                      Hilliard, OH

FIELD OF STUDY

Major Field: Education

Studies in: Special Education
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CHAPTER 1

INTRODUCTION

Reading has long been considered to be a critical contributing factor to student success in our society. Although both researchers and the general public have voiced this concern, large numbers of students continue to have difficulty in acquiring skills in basic literacy and reading achievement. In their most recent evaluation of students’ fourth grade reading achievement, The National Center for Education Statistics (NCES, 2004) reported that 37% of students read below grade level. 26% of these students still do not read at grade level by the eighth grade (NCES, 2004). This lack of grade-level reading skills indicates high levels of disfluency, which strongly interferes with present and future student success in society (Otaiba & Rivera, 2006).

The negative effects and consequences of poor reading skills extend far beyond the fourth grade. The need for special education services has heightened dramatically and continues to rapidly rise. Reading difficulties is one of the primary reasons that students are referred for special education services. Heward (2006) states that the most complete and accurate information on how many children with disabilities live in the United States is derived from the child count data collected each year by the U.S. Department of Education. More than 6.3 million children, ages 3 to 21, received special education
services during the 2003-2004 school year and 2,816,361 (47.2%) of these children received services for specific learning disabilities (U.S. Department of Education, 2004). The Committee on the Prevention of Reading Difficulties in Young Children (Snow, Burns, & Griffin, 1998) reports that approximately 3.5% of U.S. schoolchildren receive services for a reading disability, which equates to over 2 million children nationwide, and roughly 80% of those who are classified with a learning disability (Begeny & Martens, 2006). As schools struggle to cope with the rapidly increasing need for special educational services and high levels of student reading problems, students continue to enter into adulthood with low level reading skills. Each year over 700,000 students graduate from high school and are unable to read their high school diploma (Toffler, n.d.). Over 10%, 25 million, of Americans are completely illiterate; they cannot read or write at all. Another 20%, 45 million, of Americans are functionally illiterate; they can read words, but struggle in comprehending their meanings, synthesizing information, and making decisions based on what they read (Toffler, n.d.).

Research indicates that people with limited or no reading skills have high levels of difficulty in the work force, struggle in making important financial decisions, and have inadequate skills in maintaining functional health. High illiteracy rates have also been linked to increased school dropout and crime rates. 85% of youth appearing in juvenile court and an equivalent 85% of prisoners are illiterate (Toffler, n.d.). In 1998, an average
of only 39.6% of students who did not finish high school were in the workforce, while 78.7% of college graduates held jobs (Toffler, n.d.). These statistics point to the conclusion that reading levels play a crucial role not only in student academic success, but also in key societal issues.

The National Reading Panel (2002) has identified five essential components for reading instruction: phonemic awareness, phonics, fluency, word knowledge, and comprehension. Fluency is one of several critical factors necessary for reading comprehension and skilled reading (Report of the National Reading Panel, 2006).

Three definitions of oral reading fluency as defined and amended by S.J. Samuels (1998) include: (a) the ability to decode and comprehend at text simultaneously (b) accuracy of word recognition and reading speed (c) reading with accuracy, speed, and comprehension (Report of the National Reading Panel, 2001). The universally accepted definition of oral reading fluency is both the accuracy and speed with which text is read orally. Accuracy refers to the number of words read correctly. Speed refers to the rapidness and smoothness of oral reading.

Oral reading fluency is a gradually developing and complex skill and plays a pivotal role in achieving success in reading (Speece & Ritchey, 2005). The National Center to Improve the Tools of Educators (Kameenui, 1996), the National Institute of Child Health and Human Development (Grossen, 1997), and the National Research
Council (1998) have all conducted recent studies that have identified oral reading fluency as a fundamental skill of proficient early readers (as cited in Eckert, Ardoin, Daly, & Martens, 2002). Students’ rates of accurate oral reading have been shown to correlate with a large number of important reading skills especially in the area of comprehension. When students are able to read text fluently they have the ability to read both rapidly and effortlessly, therefore having to pay lesser attention to the mechanics of reading (such as deciphering letter sounds and decoding). This in turn enables the student to attend to the meaning of the text, which allows for higher rates of comprehension (Meyer & Felton, 1999).

It is well documented in educational literature that reading fluency plays an important role in the decoding, comprehension, and motivation of readers. Students with poor reading fluency read very slowly and awkwardly. They produce a single word at a time, which then severely limits their overall understanding of the reading passage. They also tend to ignore punctuation and to read without expression so that phrases and sentences become meaningless and very difficult to comprehend. Reading becomes so difficult and tedious that these students often lose interest in reading. This causes these students to engage in reading much less than their peers so they continue to fall farther and farther behind (Hasbrouck, Ihnot, & Rogers, 1999). Stanovich (1986) described this phenomenon as the “Matthew Effect.” Good readers continue to improve over time,
which makes it both extremely difficult and unlikely for poor readers to ever catch up (McNamara, Scissons, & Dahleu, 2005).

An efficient and established manner to determine whether or not a student is a fluent reader is by comparing a child’s fluency scores with established norms or benchmarks for his/her particular grade level. There are a variety of benchmark assessments available to teachers and administrators including DIBELS (Good & Kaminski, 2002), AIMSweb (Edformation, 2004), the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2004), and the Reading Fluency Monitor (Read Naturally, 2002, as cited in Hasbrouck & Tindal, 2006). Benchmark assessments determine oral reading fluency by measuring oral reading rate per minute. This is done by counting the number of words read correctly in connected text in one minute and comparing this number to oral reading fluency performance norms. National Oral Reading Fluency norms were published in 1992 and were reconfigured and republished in 2005. These performance norms were created by compiling data from 23 geographically and demographically diverse school districts in the United States and include a representative sample of students from all levels of achievement. Percentages are reported from the 90th through the 10th percentile levels. Students are considered at risk for future reading difficulty if they are reading more than ten words below the 50th percentile. Students who read at least ten words below the 50th percentile are interpreted as within the normal,
expected, and appropriate range for students in that grade level. By the end of the first grade students should be able to read at least 43 words per minute. By the end of the second grade students should be able to read at least 79 words per minute (Hasbrouck & Tindal, 2006). According to the DIBELS (Good & Kaminski, 2007) benchmark goals for oral reading fluency, students are considered at risk if they are reading fewer than 40 words per minute by the end of the first grade and are considered at risk if they are reading less than 110 words per minute by the end of the second grade. Students must use a combination of speed and accuracy in order to accurately and quickly identify words in text to be characterized as fluent readers (Speece & Ritchey, 2005). Additional ways to assess fluency consist of counting the number and length of pauses a student emits while orally reading a passage or by rating the prosodic quality (expression, volume, phrasing, smoothness, and pace) of oral reading on a scale from 1 to 6 (Meyer & Felton, 1999).

Those students whose oral reading fluency assessment scores indicate that they read fluently are able to focus on text meaning, hold larger portions of the text in working memory, and integrate the meaning of the text with their background knowledge. Students with slower reading rates often process less text, recall less information, and struggle with the integration of prior knowledge (Otaiba & Rivera, 2006).

Even though evidence suggests that at-risk as well as typically developing children show large differences in reading fluency skill as early as the first grade, very
few studies have targeted fluency at such an early age, with the majority of studies focusing on students that are third grade or higher (Speece & Ritchey, 2005). Oral reading fluency norms were originally published only for students in grades 2-5 in 1992 showcasing the original belief that oral reading fluency developed only in the higher grade levels. Due to the amount of increasing evidence that oral reading fluency begins as early as kindergarten or 1st grade, new national performance norms for oral reading fluency were developed and published in 2005 for grades 1-8 (Hasbrouck & Tindal, 2006). A longitudinal study of the development of oral reading fluency in young children at risk for reading failure conducted by Speece and Ritchey (2005) indicates that students who struggle with reading fluency as early as late kindergarten and early first grade continue to have persistent difficulties with early reading acquisition. Students involved in the study with lower performance in reading fluency continued to display lower performances throughout their first and second grade years (Speece & Ritchey, 2005). This indicates that fluency building activities and instruction must be incorporated in the beginning stages of student reading acquisition.

Although fluency is believed to be an important and vital part of reading success it has been highly neglected in our educational system with a higher emphasis being placed on decoding instruction. Many students with special needs may not develop fluent reading skills automatically as their typical peers do and need more direct fluency
instruction (Allinder, Dunse, Brunken, & Obermiller-Krolikowski, 2001). Therefore, it is important that educators include strategies to increase oral reading fluency in the curriculum. A large quantity of research has been conducted to evaluate various interventions designed to improve fluency due to the importance of reading fluency in developing strong reading competence and to the fact that oral reading fluency is sensitive to instructional methods and changes (Daly, Martens, Hamler, Dool, & Eckert, 1999). Interventions designed to improve student fluency include those that involve forms of instruction (skill-based) and those that involve forms of reinforcement (performance-based) (Chafouleas, Martens, Dobson, Weinstein, & Gardner, 2004; Eckert, Ardoin, Daly, & Martens, 2002). The most commonly researched and used fluency building methods comprise the use of repeated readings, passage previewing, phase drill error correction, performance feedback, and contingent reinforcement (Eckert et. al., 2002). Each of these oral reading interventions is described in detail below.

Repeated Readings

Repeated reading uses practice to build fluency. In this approach, students practice reading a single chosen passage (at an appropriate instructional level) until a predetermined criterion of reading fluency is met (Welsch, 2006). Typically the student reads the same passage 3-5 times or until they reach a pre-established criterion (ex: 50 words per minute) (Otaiba & Rivera, 2006).
As originally conceptualized by Dahl (1974) and Samuels (1979), repeated reading is based on the information processing model which suggests that fluent readers are those who decode text automatically, leaving attention free for comprehension. The three goals of repeated reading as stated by Samuels are to (a) increase reading speed; (b) transfer that improvement in speed to subsequent material; and (c) enhance comprehension with each successive rereading of the text (as cited in Meyer & Felton, 1999).

Repeated reading has been shown to increase reading abilities for students both with and without learning disabilities. The research base for repeated reading includes students without disabilities, students with learning disabilities, high-functioning students with autism, and students with low vision. It has been used successfully with students in second through eighth grades who have an instructional reading level between the first and fifth grades (Therrien & Kubina, 2006). A majority of the research has been conducted in the elementary grades with little work done in the secondary grades, but repeated reading appears to be most beneficial for those students reading between a first and third grade level (Therrien & Kubina, 2006).

The method of repeated reading is most effective when sessions are administered frequently (3-5 times per week) with each session lasting approximately 10-20 minutes. Reading material should be carefully selected and should consist of reading passages that
the student can read at a 90-95% accuracy rate. The person administering the repeated readings should closely monitor and track the student’s performance. With proper planning, organization, and strategies repeated reading can facilitate growth in reading fluency and overall reading achievement (Therrien & Kubina, 2006).

Passage Previewing

In this approach, students are given the opportunity to read or listen to a passage prior to being instructed on or tested on that passage. This consists of giving the student time to silently pre-read a selected passage or enabling the student to listen to a more skilled reader read the passage via teacher, peer, computer, or audio tape. In this manner the student is pre-exposed to the text vocabulary, context, and features.

Research suggests that the use of passage previewing is an effective way of increasing reading fluency in a variety of populations including students both with and without disabilities (Begeny & Martens, 2006). A study conducted by Skinner, Cooper, and Cole (1997) on the effects of oral presentation previewing rates on reading performance confirmed previous research indicating that listening previewing results in greater increases in rates of accurate rereading than silent previewing. The results also suggest that students’ rates of accurate oral rereading may be greater if adult readers intentionally reduce their reading rates (Skinner et. al., 1997). This form of model reading can be performed by teachers, paraprofessionals, tutors, parents, or through the use of
partner reading or peer tutoring and has been shown to greatly enhance oral reading fluency.

*Phase Drill Error Correction*

This method is similar to repeated readings in that it requires students to read text repeatedly, but rather than rereading a whole set of text, students are required to read a particular phrase that contains a word that the student previously read incorrectly (Begeny & Martens, 2006). Phase drill error correction provides the opportunity for students to practice error words in contextual phrases. The student practices incorrectly read words using the same phrases that encompass them in the text.

*Performance Feedback*

Teachers can aid students in building reading fluency by providing them with feedback and guidance during oral reading exercises. This is accomplished by providing the correct words when the student makes errors during oral reading (Welsch, 2006). Feedback can help students distinguish between correct and incorrect answers, help them focus on accuracy, and teach them to eventually self-correct their own mistakes (Chafouleas et al., 2004).

Teachers should encourage students to assist in setting reading goals and in monitoring their own progress. Teachers can help students graph or chart their reading
performances and provide students with praise and words of encouragement. This inspires students to work hard to further develop and enhance their reading skills.

*Contingent Reinforcement*

Providing reinforcement contingent on accurate or increased oral reading responses has been shown to increase the reading performance of students both in the regular and special education classrooms. With this method, students are rewarded when they meet a pre-specified criterion of achievement (Chafouleas et al., 2004). A study by Noell et al. (1998) that was designed to examine the effects of contingent reward and instruction on oral reading fluency showed that the use of contingent rewards alone increased oral reading fluency rates for 2 out of the 3 participants. However, the highest levels of increased rates of oral reading fluency occurred when a combination of contingencies, modeling, and practice were used with all 3 participants, which could indicate that contingent rewards could be used to enhance other oral reading fluency interventions.

The methods described above have been shown to increase oral reading fluency when administered in isolation, but tend to produce larger and more immediate results when used in combination with each other (Begeny & Martens, 2006). The most effective oral reading fluency interventions and oral reading fluency intervention combinations have been demonstrated in research comparison studies to be unique to each student.
However, students show increased rates of oral reading fluency when one or more of these oral reading fluency interventions are administered.

The majority of existing literature and research connected with oral reading fluency has primarily focused on two groups of students: (a) students without disabilities and (b) students with cognitive delays and learning disabilities. Little study and research has been conducted with students with moderate to severe disabilities and students with mental retardation. This study extends the development of oral reading fluency to this new population.

Purpose of the Study

The purpose of this study was to develop and increase oral reading fluency in a group of first and second grade students with multiple disabilities. It examined the effects of a reading fluency activity on student fluency levels. The reading fluency activity used a combination of word practice in isolation (word flashcards), model reading (teacher reads aloud as students follow along), guided practice (students read along with teacher), and partner reading (students take turns reading) to build fluency. Students participated in the fluency activity in groups of two and were grouped according to ability level (fluency levels were assessed prior to the intervention). Decodable passages were chosen based on the individual reading levels of the students.
Research Questions

1. Do fluency building activities increase the number of words students read correctly per minute?

2. Do fluency building activities increase student reading comprehension?

3. Do students enjoy participating in fluency building activities?
CHAPTER 2

METHOD

Participants

Six students with moderate to severe disabilities who qualified for special education services in the “multiple disabilities” category. The disabilities included cognitive delays, emotional disorders, communication (speech and/or language) delays, fine motor difficulties, and deficits in adaptive behavior/social behavior. The number and severity of disabilities were unique to each student. All six students had significant delays in reading. Four of the students were in the first grade and were between the ages of 6 and 7. Two of the students were in the second grade and were between the ages of 7 and 8. Five students were male and one student was female. Four of the students were Caucasian and two students were Biracial. Five out of the six students qualified for the free/reduced lunch program. Student demographics are outlined in the Table 2.1.
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Table 2.1: Student Demographics

Prior to intervention all 6 students were assessed to determine their present skill levels in word-identification and reading fluency. Students were administered the Letter-Word Identification and Reading Fluency portions of the W-J-III (Woodcock et al., 2001).

Setting

This study took place in an elementary school located in a small, rural town in the Midwest. The elementary school housed students in grades 1-6. The study was conducted in a self-contained special education classroom. The students were divided into three
groups of two and were grouped according to their skill levels (based on initial assessment scores on the Woodcock-Johnson III). Fluency assessments, readings, and activities took place at a kidney shaped reading table located at the back of the classroom. The teacher worked with one group at a time at this table while the other students in the classroom worked at various reading and math centers located around the classroom. One paraprofessional was present in the room and worked with students at a designated center.

Materials

The materials used throughout this research study included: the W-J-III (Woodcock et al., 2001) Letter-Word Identification and Fluency assessments, student folders, reading material, data collection score sheets, sticker charts, stickers, timer, the DIBELS fluency assessment, and tangible reward items. These items are described in detail below.

Woodcock-Johnson III Standard Tests of Achievement

Both the Letter-Word Identification and Fluency portions of the W-J-III (Woodcock et al., 2001) were used to assess the students participating in the study prior to data collection. These tests show reliabilities of 0.80 or higher. The reliability levels meet or exceed basic standards for both individual placement and programming decisions.
(Woodcock et al., 2001). Students were reassessed using these same assessment measures upon completion of the intervention.

**Student Folders**

The researcher created a folder for each student participating in the study. Each folder contained students’ W-J-III test scores, reading materials, students’ completed data collection score sheets, blank data collection score sheets, and sticker charts.

**Practice Passages**

The reading materials used throughout the fluency activities were phonics-based readers taken from Process Phonics (Pollack & Minner, 1995). These were short passages consisting of mostly high frequency and decodable words. Each passage consisted of 40 to 85 words. Passage length increased gradually throughout the study. These practice passages were chosen based on the students’ pretest scores on the Letter-Word Identification and Reading Fluency portions of the W-J-III (Woodcock et al., 2001) and were targeted to fit the average reading level of the students.

**DIBELS Fluency Assessment**

The DIBELS (Good & Kaminski, 2007) Oral Reading Fluency 1st Grade assessment was used to evaluate and track student fluency levels throughout the study. This is a standardized, individually administered test of fluency with connected text.
**Timer**

A digital kitchen timer was used to time all of the 1-minute timed readings.

**Stickers and Tangible Reward Items**

Students were given 1 marshmallow or goldfish cracker (as per student’s choice) for each word stated correctly during the word knowledge portion of the fluency activity and for each sentence read during the partner reading and testing portions of the fluency activity. In addition to this, students earned 1 sticker on their sticker charts for each fluency activity session that they completed. When students acquired 3 stickers on their sticker charts they were allowed to choose a reward out of a “reward bucket” that consisted of items such as pencils, erasers, plastic rings, small plastic animals, small toys, and small pieces of candy.

**Researcher**

The researcher of this study was a graduate student at The Ohio State University. She was in the School of Physical Activities and Educational Services studying special education. The researcher attended Ohio University from the fall of 1999 through the spring of 2003. She earned her bachelor’s degree in early childhood education and currently holds a teaching licensure for grades K-3 and a reading validation for grades K-12. In the summer of 2003 she earned a temporary special education teaching licensure and accepted a teaching position in the London City School district working for the
Madison County Board of MR/DD. At the time of this study, she was in her fourth year of teaching a class of elementary students with multiple disabilities. This master’s thesis was completed to enable her to fulfill the requirement for the M.A. in Special Education.

Definition and Measurement of the Dependent Variable

Two dependent variables were measured throughout this study: (a) the number of correct words read in 1-minute; and (b) the number of words students use to retell the passage.

The number of correct words read in 1-minute is defined as the number of printed words read with correct pronunciation and in its entirety within a 1-minute time period. Students must read each word correctly within a 3-second time period to be counted as correct. If a student self-corrects a word within 3-seconds the word is counted as correct.

The number of words students use to retell the passage is defined as the number of orally spoken words directly after completion of the oral reading that are associated with the reading passage. Words that are not associated with the reading passage are discounted.

Interobserver Agreement

Interobserver agreement was calculated using the Exact Agreement method. In this method, agreement is scored for each interval in which observer 1 and observer 2 score identical frequencies of behavior. Agreement is then calculated using the following
formula: Agreement Frequency/(Agreement Frequency + Disagreement Frequency) x 100 = ___%.

The teacher (researcher) trained the classroom teacher’s aide (paraprofessional) on the scoring procedures used in this study. The researcher explained the purpose of the study and the proper scoring procedures. Examples and nonexamples of the target behavior were provided and explained. Interobserver agreement was calculated using data collected by the primary researcher and the paraprofessional. During sessions in which data was collected for interobserver agreement both the paraprofessional and the teacher sat at the kidney table with each student and independently scored the number of correct orally read and stated words in the 1-minute timed readings and retells. Both the researcher and the paraprofessional had a copy of the reading passage and marked the number of correct words read per minute. During retells both the researcher and the paraprofessional copied down on paper what the students said. Interobserver agreement was calculated by comparing the number of exact words the researcher and the paraprofessional counted during 1-minute timed readings and retells.

Procedural Integrity

Procedural integrity was ensured through periodic informal checks on the researcher implementing the intervention. The paraprofessional present in the classroom was given a checklist containing all of the steps necessary in administering and
completing the intervention. The paraprofessional assessed the researcher (teacher) weekly throughout the research study by observing intervention sessions and indicating on the checklists whether or not each step had been completed. This helped ensure that the teacher was administering the intervention correctly. A copy of the procedural integrity checklist is included in Appendix C.

Experimental Design

A multiple baseline across participants was used in this study. For this research study, students were divided into three groups with each group consisting of two students. Baseline data collection began with all three groups. Once stable baseline levels were obtained the intervention was implemented with the first group of students. Baseline was continued with the second and third groups of students. When the effect of the intervention was evident with Group 1, the same intervention was implemented with Group 2. Baseline continued to be collected for Group 3. Once the effect of the intervention was evident with Group 2, the same intervention was then implemented with Group 3. Staggering the implementation of the intervention among groups helped ensure that there was no effect of extraneous variables on the dependent variables. Experimental control is established when the change in the dependent variable occurs when and only when the independent variable is applied to the dependent variables. This is shown through verification and replication of the experiment. Verification is evident when there
is little or no change in data patterns of the participants still in baseline. Replication is achieved when data patterns change in the same manner as previous data paths did when the intervention was applied to the dependent variables.

Procedures

Pre-Baseline

Prior to collecting baseline data, the researcher assessed skills in letter identification, word identification, and oral reading fluency of each participant. Students were assessed using the W-J-III (Woodcock et al., 2001). This assessment instrument is an individually administered, norm-referenced assessment. Results are based on a standard score format with a mean of 100 with a standard deviation of 15. The W-J-III (Woodcock et al., 2001) has been used for a large number of educational, clinical, and research purposes; it can be extremely beneficial in student evaluations and diagnoses, educational programming, planning individual programs, assessing student academic growth, program evaluation, and research.

The researcher administered test 1: Letter-Word Identification; and test 2: Reading Fluency, to the study participants. Students were taken individually into the hallway to complete the test. Both portions of the test were administered to each student and the results were then calculated using the scoring guidelines located in the Woodcock-Johnson Examiner’s Manual.
The Letter-Word Identification portion of the test measured the students’ word identification skills. The students were required to first identify letters in large type. Later probes required the students to pronounce words correctly. Test items became increasingly difficult as the test continued. Students were not required to know the meanings of any words.

Students received 1 point for each item answered correctly and 0 points for each item answered incorrectly. The Letter-Word Identification test was divided into 15 sections. If students missed 6 or more words in a section the test was discontinued. At the end of the test the total number of earned points was added (raw score) and the scoring table was used to translate raw point scores into estimated age equivalent and grade equivalent results.

The Reading Fluency portion of the test measured the students’ ability to quickly read simple sentences, decide if the statement was true, and then circle Yes or No. Students were given 3 seconds to say each word. If a student did not read a word within 3 seconds or read a word incorrectly the student was given the correct word by the teacher and the word was counted as incorrect. Students completed as many questions as possible within a 3-minute time limit. The sentences gradually increased in difficulty during the course of the assessment.
At the end of the test the total number of correct words and the total number of incorrect words were counted and recorded. Total score of the test was calculated using the following equation: Number Correct – Number Incorrect = Total Raw Score. The scoring table was then used to translate total raw scores into estimated age equivalent and grade equivalent results. If total raw score of the test was a negative number a score of 0 was used to translate scores.

Student testing results are outlined in Table 2.2. Each student’s raw score, age equivalent score, and grade equivalent score is provided. For example, Student 1 received a raw score of 14, which translates into an age equivalent score of 5 years and 11 months and a grade equivalent score of a child in the sixth month of kindergarten.
Table 2.2: Letter-Word Identification and Reading Fluency Pretest Results

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Letter-Word Identification</th>
<th>Reading Fluency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Score</td>
<td>Age Equivalent Score (Estimated)</td>
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<tr>
<td>1</td>
<td>14</td>
<td>5-11</td>
</tr>
<tr>
<td>2</td>
<td>14</td>
<td>5-11</td>
</tr>
<tr>
<td>3</td>
<td>17</td>
<td>6-3</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
<td>6-6</td>
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<td>6-6</td>
</tr>
<tr>
<td>6</td>
<td>22</td>
<td>6-8</td>
</tr>
</tbody>
</table>

Baseline

During the baseline phase students were given individually administered 1-minute timed readings. The DIBELS (Good & Kaminski, 2007) Oral Reading Fluency 1st Grade assessment was administered 3 times weekly to participants in order to measure and monitor their levels of oral reading fluency. Students were also administered daily 1-minute timed readings using Process Phonics readers. During these assessments, students
were taken individually to a quiet area of the classroom and provided with a copy of a 1-2 page reading passage. As indicated in the DIBELS directions, students were told, “Please read this (point) aloud. If you get stuck, I will tell you the word so you can keep reading. Start here (point to first word of the passage). Begin.”

A kitchen timer set at 1-minute was started when the student said his/her first word of the passage. At the end of the 1-minute time period the student was told to “stop” and the passage was removed. The student was asked to tell about what they had read. If the student did not say anything or got off track for 5 seconds, they were asked to stop the retell. The number of words stated during the retell period that were related to the reading passage was recorded. If the student did not say any words associated with the reading passage a score of “0” was recorded.

**Intervention**

The purpose of this study was to evaluate the effects of an oral reading fluency activity on student oral reading capabilities. The 6 study participants were divided into 3 groups of 2 students each. Students were grouped based on oral reading fluency scores obtained from the pre-administered W-J-III (Woodcock et al., 2001). The researcher attempted to place students with the same or very similar oral reading fluency rates in the same group. The intervention was administered to the students with the lowest scores first. The groups are given in Table 2.3.
<table>
<thead>
<tr>
<th><strong>Group Number</strong></th>
<th><strong>Group Members</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student 1</td>
</tr>
<tr>
<td></td>
<td>Student 2</td>
</tr>
<tr>
<td>2</td>
<td>Student 3</td>
</tr>
<tr>
<td></td>
<td>Student 4</td>
</tr>
<tr>
<td>3</td>
<td>Student 5</td>
</tr>
<tr>
<td></td>
<td>Student 6</td>
</tr>
</tbody>
</table>

Table 2.3: Student Groupings

Once a stable baseline was established for the students in Group 1 the independent variable was administered to the first group of students (Group 1). Baseline continued to be collected on Group 2 and Group 3 without providing them with any intervention. The intervention (reading fluency activity) used the practice passages and consisted of 4 main parts: word practice and knowledge, model reading with guided practice, partner reading, and testing reading knowledge. These main parts are discussed in detail below.

1. Word Practice and Knowledge

   (a) Introduce the Activity

   Prior to the activity the teacher placed words from the chosen reading passage on colored flashcards. The teacher said to students, “We are going
to read some words to get ready for our reading game. I will show the words and then you will read them.”

(b) Word Practice

The teacher held up one flashcard at a time and modeled reading each word by using her pointer finger. She read each word and then asked the students to repeat the word. Ex: Teacher said, “ran. What word?”

Students repeat, “ran.”

(c) Testing Word Knowledge

Once the teacher had modeled and reviewed each word flashcard students were given individual turns at reading the word flashcards. If students made an error, the teacher modeled the correct word and had them repeat it.

Students received 1 marshmallow or 1 goldfish cracker (as per student’s choice) for each word read correctly.

2. Model Reading with Guided Practice

(a) Model Reading

The teacher told students, “Get ready for our reading game. Put your finger on the first word of our story and follow along as I read it.” The teacher read the passage slower than normal and pointed to the words as
she read. The teacher monitored students to ensure that they were following along and pointing to the correct words as she read.

(b) Guided Practice

The teacher told students, “Now, we will read the story together. Follow along with your finger as we read.” The teacher and students read the passage together.

3. Partner Reading

The teacher told students, “Now, it’s your turn to read the story with your partner. The first reader is _______ and the second reader is _______ (say student names). Remember to take turns reading one sentence at a time and to follow along as your partner reads by using your finger to point at each word.”

The teacher monitored students as they took turns reading sentences. The reading passage was read through completely 2 times with the students alternating sentences. This ensured that each student had practiced reading aloud each sentence present in the reading passage. If a student made an error, the teacher modeled the correct word and had the student repeat it. For each sentence read correctly students received 1 marshmallow or 1 goldfish cracker (as per student’s choice).

4. Testing Reading Knowledge
The teacher had each student read the passage independently for 1-minute. If the student got stuck on a word for 3 seconds, the teacher told the student the word. At the end of the 1-minute duration the teacher recorded the student’s number of correct words on the data collection sheet.

The student was then asked to retell what he/she had read. If the student did not say anything or got off track for 5 seconds, they were asked to stop the retell. The teacher recorded the student’s number of correct words (words having to do with the passage) in the passage retelling on the data collection sheet. Words the student said not having to do with the reading passage are not counted.

At the end of each session students received 1 sticker on their sticker charts (as long as session was completed by student). Each time they accumulated 3 stickers on their sticker charts they are allowed to choose a reward out of the reward bucket. The reward bucket consisted of items such as pencils, pencil erasers, plastic rings, plastic animals, small coloring books, small toys, and pieces of candy. Students were then individually administered the DIBELS Oral Reading Fluency 1st Grade assessment 3 times weekly. Scores were recorded on each student’s data collection sheet and placed in individual student folders.

The reading passages used in the fluency activity were chosen based on students’ levels of oral reading fluency. Each reading passage was used for a total of 5 sessions.
Intervention was administered daily when only group 1 was in intervention as well as when both group 1 and group 2 were in intervention. When all three groups were in intervention a schedule was arranged so that each group received intervention at least 3 times weekly. This was due to lack of time within the school day to administer intervention to all 3 groups daily.
Social Validity

Once the intervention was discontinued, a social validity measure in the form of a questionnaire was given to each student. The purpose of the social validity questionnaires was to assess student opinions of the oral reading fluency activity and to determine the extent to which consumers would consider using this procedure in the future.

The student questionnaire contained five questions about the oral reading fluency activity. A paraprofessional, instead of the primary researcher, administered and collected the social validity responses. The paraprofessional sat with each child individually in a quiet corner of the classroom to give the social validity questionnaire. She read each question aloud to the student and had each student choose his or her response to the question by circling one of the three pictorial responses (smiley face, neutral face, and frown face).
CHAPTER 3

RESULTS

This chapter reports the results of the study for each of the participants. Several sets of data are presented in this chapter. The data include both pretest and posttest scores of the W-J-III (Woodcock et al., 2001) given in age and grade equivalent formats, the average number of words read during baseline and during intervention for both the DIBELS and practice passages, and the average number of retell words during baseline and during intervention for both the DIBELS and practice passages.

Due to the use of the multiple baseline design, length of intervention varied for each participant. The number of baseline and intervention sessions for each student is included. The graphs presented throughout the chapter illustrate the number of words read per minute and the number of words stated in the passage retells for each session by each participant. Each student’s data is shown individually. At the conclusion of the chapter graphs are displayed in multiple baseline format. Baseline and intervention averages for the DIBELS passages as well as pre- and posttest results are presented in tables. Graphs are also displayed in multiple baseline format for the number of words
read per minute and the number of words stated in the passage retell for the fluency
intervention activity sessions.

After all of the intervention sessions were completed the researcher reassessed
skills in letter identification, word identification, and oral reading fluency of each
participant. Students were assessed using the W-J-III (Woodcock et al., 2001).

Student pre- and posttest results are outlined in Tables 3.1 and 3.2.

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Raw Score</th>
<th>Age Equivalent Score (Estimated)</th>
<th>Grade Equivalent Score (Estimated)</th>
<th>Raw Score</th>
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<tr>
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<td>23</td>
<td>6-9</td>
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Table 3.1: Letter-Word Identification Pretest and Posttest Results
<table>
<thead>
<tr>
<th>Student Number</th>
<th>Total Points</th>
<th>Age Equivalent Score (Estimated)</th>
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<td>&lt;K.7</td>
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<td>&lt;K.7</td>
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<td>7-5</td>
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</table>

Table 3.2: Reading Fluency Pretest and Posttest Results
Student 1

Baseline

Student 1 belonged to Group 1 and had four baseline probes prior to intervention. The mean number of words read per minute during baseline was 5.3. The mean number of words retold during baseline was 0.

Student 1 had four baseline sessions prior to intervention using the practice passages. The mean number of words read per minute during baseline was 30.3. The mean number of words retold during baseline was 4.5. The same practice passage was used for five consecutive sessions for each of the students. The number of words students read per minute generally increased over the five sessions and then dropped each time a new practice passage was presented. This trend in the data can be seen in Figure 3.8.

Intervention

Student 1 received twenty-seven probes during intervention. The mean number of words read per minute during intervention was 7.3. The mean number of words retold during intervention was 5.7.

Student 1 received thirty-four intervention sessions using the practice passages. The mean number of words read per minute during intervention was 46.2. The mean number of words retold during intervention was 20.3.

Pre- and Post-Tests
On the letter-word identification pretest, Student 1 received a raw score of 14 with an age equivalent score of 5-11 and a grade equivalent score of K.6. He obtained a total point score of 0 with an age equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency pretest.

Student 1 received a raw score of 20 with an age equivalent score of 6-6 and grade equivalent score of 1.2 on the letter-word identification posttest. He obtained a total point score of 0 with an age-equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency posttest.

The overall gain from pretest to posttest on letter-word identification was 0.5 or five month grade equivalency. Although Student 1 obtained a score of 0 for both the reading fluency pretest and posttest he read twelve more correct words in the posttest than he did in the pretest.
Figure 3.1: DIBELS ORF and Retell Scores
Student 1
**Student 2**

**Baseline**

Student 2 belonged to Group 1 and had three baseline probes prior to intervention. The mean number of words read per minute during baseline was 3.3. The mean number of words retold during baseline was 0.

Student 2 had three baseline sessions prior to intervention using the practice passages. The mean number of words read per minute during baseline was 1.3. The mean number of words retold during baseline was 0.

**Intervention**

Student 2 received nineteen probes during intervention. The mean number of words read per minute during intervention was 3.6. The mean number of words retold during intervention was 4.6.

Student 2 received twenty-two intervention sessions using the practice passages. The mean number of words read per minute during intervention was 4.5. The mean number of words retold during intervention was 3.4.

**Pre- and Post-Tests**

Student 2 received a raw score of 14 with an age equivalent score of 5-11 and a grade equivalent score of K.6 on the letter-word identification pretest. He obtained a total
point score of 0 with an age equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency pretest.

Student 2 received a raw score of 8 with an age equivalent score of 5-1 and grade equivalent score of K.1 on the letter-word identification posttest. He obtained a total point score of 0 with an age-equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency posttest.

There was an overall loss of 0.5 or five month grade equivalency from pretest to posttest on letter-word identification. Student 2 obtained a score of 0 and read seven words correctly on both the reading fluency pretest and posttest.
Figure 3.2: DIBELS ORF and Retell Scores
Student 2
**Student 3**

**Baseline**

Student 3 belonged to Group 2 and had nine baseline probes prior to intervention. The mean number of words read per minute during baseline was 4.5. The mean number of words retold during baseline was 0.4.

Student 3 had fifteen baseline sessions prior to intervention using the practice passages. The mean number of words read per minute during baseline was 14.5. The mean number of words retold during baseline was 3.3.

**Intervention**

Student 3 received fourteen probes during intervention. The mean number of words read per minute during intervention was 7.9. The mean number of words retold during intervention was 8.

Student 3 received fifteen intervention sessions using the practice passages. The mean number of words read per minute during intervention was 17.7. The mean number of words retold during intervention was 12.3.

**Pre- and Post-Tests**

Student 3 received a raw score of 17 with an age equivalent score of 6-3 and a grade equivalent score of K.9 on the letter-word identification pretest. He obtained a total
point score of 0 with an age equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency pretest.

Student 3 received a raw score of 20 with an age equivalent score of 6-6 and grade equivalent score of 1.2 on the letter-word identification posttest. He obtained a total point score of 0 with an age-equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency posttest.

The overall gain from pretest to posttest on letter-word identification was 0.3 or three month grade equivalency. Although Student 3 obtained a score of 0 for both the reading fluency pretest and posttest he read fifteen more correct words in the posttest than he did in the pretest.
Figure 3.3: DIBELS ORF and Retell Scores
Student 3
**Student 4**

**Baseline**

Student 4 belonged to Group 2 and had eleven baseline probes prior to intervention. The mean number of words read per minute during baseline was 4.1. The mean number of words retold during baseline was 0.2.

Student 4 had seventeen baseline sessions prior to intervention using the practice passages. The mean number of words read per minute during baseline was 15. The mean number of words retold during baseline was 2.1.

**Intervention**

Student 4 received twenty-one probes during intervention. The mean number of words read per minute during intervention was 7.7. The mean number of words retold during intervention was 1.5.

Student 4 received twenty-three intervention sessions using the practice passages. The mean number of words read per minute during intervention was 16.6. The mean number of words retold during intervention was 9.2.

**Pre- and Post-Tests**

Student 4 received a raw score of 20 with an age equivalent score of 6-6 and a grade equivalent score of 1.2 on the letter-word identification pretest. She obtained a total
point score of 0 with an age equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency pretest.

Student 4 received a raw score of 21 with an age equivalent score of 6-7 and grade equivalent score of 1.2 on the letter-word identification posttest. She obtained a total point score of 0 with an age-equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency posttest.

Student 4 received the same grade equivalent score on the letter-word identification pretest and posttest. Although Student 4 obtained a score of 0 for both the reading fluency pretest and posttest she read twelve more correct words in the posttest than she did in the pretest.
Figure 3.4: DIBELS ORF and Retell Scores
Student 4
**Student 5**

**Baseline**

Student 5 belonged to Group 3 and had seventeen baseline probes prior to intervention. The mean number of words read per minute during baseline was 5.8. The mean number of words retold during baseline was 0.06.

Student 5 had twenty-four baseline sessions prior to intervention using the practice passages. The mean number of words read per minute during baseline was 14.6. The mean number of words retold during baseline was 2.3.

**Intervention**

Student 5 received fourteen probes during intervention. The mean number of words read per minute during intervention was 11.1. The mean number of words retold during intervention was 0.

Student 5 received fourteen intervention sessions using the practice passages. The mean number of words read per minute during intervention was 23.4. The mean number of words retold during intervention was 1.6.

**Pre- and Post-Tests**

Student 5 received a raw score of 20 with an age equivalent score of 6-6 and a grade equivalent score of 1.2 on the letter-word identification pretest. He obtained a total
point score of 0 with an age equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency pretest.

Student 5 received a raw score of 23 with an age equivalent score of 6-9 and grade equivalent score of 1.4 on the letter-word identification posttest. He obtained a total point score of 0 with an age-equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency posttest.

The overall gain from pretest to posttest on letter-word identification was 0.2 or two month grade equivalency. Although Student 5 obtained a score of 0 for both the reading fluency pretest and posttest he read six more correct words in the posttest than he did in the pretest.
Figure 3.5: DIBELS ORF and Retell Scores
Student 5
**Student 6**

**Baseline**

Student 6 belonged to Group 3 and had sixteen baseline probes prior to intervention. The mean number of words read per minute during baseline was 11.4. The mean number of words retold during baseline was 5.

Student 6 had twenty-four baseline sessions prior to intervention using the practice passages. The mean number of words read per minute during baseline was 39.9. The mean number of words retold during baseline was 13.5.

**Intervention**

Student 6 received fifteen probes during intervention. The mean number of words read per minute during intervention was 14.5. The mean number of words retold during intervention was 9.5.

**Pre- and Post-Tests**

Student 6 received a raw score of 22 with an age equivalent score of 6-8 and a grade equivalent score of 1.3 on the letter-word identification pretest. He obtained a total point score of 0 with an age equivalent of <5-10 and grade equivalent of <K.7 on the reading fluency pretest.

Student 6 received a raw score of 23 with an age equivalent score of 6-9 and grade equivalent score of 1.4 on the letter-word identification posttest. He obtained a total
point score of 16 with an age-equivalent of 7-5 and grade equivalent of 2.1 on the reading fluency posttest.

The overall gain from pretest to posttest on letter-word identification was 0.1 or one month grade equivalency. The overall gain from pretest to posttest on reading fluency was 1.3 or twelve month grade equivalency.
Figure 3.6: DIBELS ORF and Retell Scores

Student 6
Figure 3.7: Dibels Scores
Figure 3.8: Practice Passage Scores
<table>
<thead>
<tr>
<th>Student</th>
<th>Baseline</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Words Read Per Minute</td>
<td>Number of Words in Retell</td>
</tr>
<tr>
<td>1</td>
<td>5.5</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>3.3</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>4.5</td>
<td>0.4</td>
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<tr>
<td>4</td>
<td>4.1</td>
<td>0.2</td>
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<tr>
<td>5</td>
<td>5.8</td>
<td>0.06</td>
</tr>
<tr>
<td>6</td>
<td>11.4</td>
<td>5</td>
</tr>
<tr>
<td><strong>Class Mean</strong></td>
<td><strong>5.8</strong></td>
<td><strong>0.9</strong></td>
</tr>
</tbody>
</table>

Table 3.3: Baseline and Intervention—Class Mean

The average number of words read per minute for all of the students doubled during intervention with an increase of 2.9 words. The average number of words in retell for all of the students increased by 4 words during intervention.
<table>
<thead>
<tr>
<th>Student</th>
<th>Letter-Word Identification Pretest Score</th>
<th>Letter-Word Identification Posttest Score</th>
<th>Gain/Loss</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>K.6</td>
<td>1.2</td>
<td>+0.5</td>
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<tr>
<td>2</td>
<td>K.6</td>
<td>K.1</td>
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<td>3</td>
<td>K.9</td>
<td>1.2</td>
<td>+0.3</td>
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<tr>
<td>4</td>
<td>1.2</td>
<td>1.2</td>
<td>0</td>
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<tr>
<td>5</td>
<td>1.2</td>
<td>1.4</td>
<td>+0.2</td>
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<tr>
<td>6</td>
<td>1.3</td>
<td>1.4</td>
<td>+0.1</td>
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<tr>
<td>Mean Change</td>
<td></td>
<td></td>
<td>+0.1: one month grade equivalency</td>
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</tbody>
</table>

Table 3.4: Letter-Word Identification Pretest and Posttest Grade Equivalent Results—Class Mean
<table>
<thead>
<tr>
<th>Student</th>
<th>Reading Fluency Pretest Number of Correct Words</th>
<th>Reading Fluency Posttest Number of Correct Words</th>
<th>Gain/Loss</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
<td>21</td>
<td>+12</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>27</td>
<td>+15</td>
</tr>
<tr>
<td>4</td>
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<td>20</td>
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<td>6</td>
<td>22</td>
<td>38</td>
<td>+16</td>
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<tr>
<td>Class Mean Change</td>
<td></td>
<td></td>
<td>+10 words</td>
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Table 3.5: Reading Fluency Pretest and Posttest Results—Class Mean
Interobserver Agreement

Interobserver agreement measures were collected 1-2 times weekly throughout the duration of the study. This equaled to 15 out of the 32 sessions (47%). Interobserver agreement for all of the collected sessions was 92.8%. The agreement range for the sessions was 83% to 100%.

Procedural Integrity

Procedural integrity was ensured through weekly informal checks on the researcher with the use of a procedural checklist. Procedural integrity was 100% for all of the collected sessions.

Social Validity

Social validity was assessed through the use of a student questionnaire. A copy of the questionnaire follows with a student response composite. 5 out of the 6 students indicated on the questionnaire that they liked reading, liked when the readings were timed, and liked the prizes and rewards earned throughout the intervention. Students were split on whether or not they liked working with a partner (3 students indicated yes, 1 student was neutral, and 2 students indicated no). Students responses were also split on whether or not they would like to participate in the reading again (3 students indicated yes, 2 students were neutral, and 1 student indicated no).
**Student Questionnaire (Oral Reading Fluency Activity)**

Name: Student response composite  
Date of completion: 5/24/2007

INSTRUCTIONS: Read each question aloud to the student. Have the student choose his or her response to each question by circling one of the three responses to the right.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
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</thead>
<tbody>
<tr>
<td>1. I liked reading</td>
<td><img src="%E2%98%BA" alt="Smiley" /> <img src="%F0%9F%98%90" alt="Neutral" /> <img src="%F0%9F%98%94" alt="Sad" /></td>
</tr>
<tr>
<td></td>
<td>5 1</td>
</tr>
<tr>
<td>2. I liked working with a partner.</td>
<td><img src="%E2%98%BA" alt="Smiley" /> <img src="%F0%9F%98%90" alt="Neutral" /> <img src="%F0%9F%98%94" alt="Sad" /></td>
</tr>
<tr>
<td></td>
<td>3 1 2</td>
</tr>
<tr>
<td>3. I liked when my reading was timed.</td>
<td><img src="%E2%98%BA" alt="Smiley" /> <img src="%F0%9F%98%90" alt="Neutral" /> <img src="%F0%9F%98%94" alt="Sad" /></td>
</tr>
<tr>
<td></td>
<td>5 1</td>
</tr>
<tr>
<td>4. I liked the rewards and prizes.</td>
<td><img src="%E2%98%BA" alt="Smiley" /> <img src="%F0%9F%98%90" alt="Neutral" /> <img src="%F0%9F%98%94" alt="Sad" /></td>
</tr>
<tr>
<td></td>
<td>5 1</td>
</tr>
<tr>
<td>5. I would like to do the reading again.</td>
<td><img src="%E2%98%BA" alt="Smiley" /> <img src="%F0%9F%98%90" alt="Neutral" /> <img src="%F0%9F%98%94" alt="Sad" /></td>
</tr>
<tr>
<td></td>
<td>3 2 1</td>
</tr>
</tbody>
</table>
CHAPTER 4

DISCUSSION

This study examined the effects of an oral reading fluency activity on the oral reading fluency and comprehension of six first and second grade students with multiple disabilities. The oral reading fluency activity used teacher modeling, drill and practice of words in isolation, repeated reading of passages, and partner reading in an attempt to increase oral reading fluency.

The study examined the number of words students were able to orally read within 1-minute intervals both with and without intervention. The study also examined the number of words students were able to retell following the timed readings. This chapter includes a discussion of the results obtained as they relate to each of the research questions presented in chapter 1. Also included in this section are the limitations of the study, implications for classroom use, directions for future research, and a summary of the findings of the study.
Research Question 1

Do fluency building activities increase the number of words students read correctly per minute?

Many researchers agree that oral reading fluency is important in the development of strong reading skills. Prior research indicates that fluency building activities and instruction can increase levels of student oral reading fluency. A study on the effects of a fluency building program on the reading performance of low-achieving second and third grade students conducted by Martens, Begeny, and Eckert found that students showed statistically significant gains in levels of oral reading fluency when fluency building activities were implemented (Martens, Begney, & Eckert, 2007). The results of this study also indicate that the inclusion of fluency building activities in the curriculum can increase the number of words students read correctly per minute.

Each of the six participants read more words correctly per minute during intervention than during baseline. Student 5 had the greatest average increase with a mean increase of 5.3 words during intervention.

Student 2 had the smallest average increase with a mean increase of 0.3 words during intervention. Student 2 had a large number of school absences throughout the study and he missed one baseline session and ten intervention sessions. Two-thirds of the
way into the study Student 2’s attendance improved, but behavior problems caused him
to miss four additional intervention sessions. The substantial number of missed
intervention sessions may have caused the minimal increase in his level of reading
fluency. This is also indicated in his reading fluency pretest and posttest scores. Student 2
was the only student to show no improvement in his posttest reading fluency score. This
information can be used to further indicate the importance of maintaining consistent
practice with fluency building activities in order to raise fluency levels.

All of the other participants made great improvements in the number of correct
words read during the allotted 3-minute testing time period. Three of the participants
more than doubled the number of correct words read during the posttest than during the
pretest. The final two participants also showed great improvement with increases of
42.9% and 72.7% in the number of correct words read during the posttest.

These results clearly indicate that fluency building activities can increase levels of
oral reading fluency. The amount of increase varied among participants, but all students
demonstrated an improvement in levels of oral reading fluency both during and after
intervention.

**Research Question 2**

**Do fluency building activities increase student reading comprehension?**
One of the definitions of reading fluency by S.J. Samuels is as follows: the ability to both decode and comprehend text simultaneously (Report of the National Reading Panel, 2001). Rates of oral reading fluency have been shown to correlate with rates of comprehension. The reasoning behind this is that when a child is able to read text fluently (both rapidly and effortlessly), he/she is able to concentrate more fully on the meaning of what they are reading. The results of this study indicate that improved oral reading fluency may result in improved comprehension skills.

Five out of the six students increased the number of words in their retell during intervention than during baseline. Student 3 had the greatest average increase with a mean increase of 7.6 words during intervention.

Student 5 is the only student to show no improvement in his levels of comprehension during the study. He struggled greatly with comprehension throughout the school year and required the use of visual cues (picture cards) to aid in the understanding of text. Picture cards were not used during this study. Student 5’s low comprehension scores could indicate that he may have become dependent on picture cues in comprehending text. Scientific evidence strongly demonstrates that the development of skilled reading involves increasingly accurate and automatic word identification skills, not the use of "multiple cueing systems" (such as picture cues) to read words. Skilled readers do not need to rely on pictures or sentence context in word identification, because
they can read most words automatically, and they have the phonics skills to decode occasional unknown words rapidly. Rather, it is the unskilled readers who tend to be dependent on context to compensate for poor word identification (Spear-Swerling, 2006). In addition to his difficulty in comprehension Student 5 required the use of hearing aides in both ears. Partway through the study one of Student 5’s hearing aids were chewed up by their dog rendering it unusable. His parents immediately ordered him a new hearing aid, but he unfortunately did not receive it until the end of the study. This may also have had an effect on Student 5’s levels of comprehension during the study.

These results suggest that increased levels of reading fluency can increase comprehension. The amount of increase varied among participants, but five out of the six students demonstrated an improvement in levels of comprehension when their levels of oral reading fluency increased.

Research Question 3

Do students enjoy participating in fluency building activities?

Results of the student questionnaire indicate that the students were split on whether or not they would like to do the activity again. One student specified that he did not like any aspect of the activity except the rewards and prizes. This is the same student that missed a large number of intervention sessions throughout the study due to poor
attendance. This same student also scored very low on his reading pretests, therefore the fluency activity proved to be challenging for him.

Results of the questionnaire point out that the students liked when their readings were timed. I also noted this while implementing the intervention sessions. The students always wanted to know how many words they read at the end of each timed reading and were very keen on beating the number of words they read during the previous session. If I implement this activity in the future I would have the students chart and track the number of words they read at each session.

One surprising finding of the questionnaire was that the students were split on whether or not they liked working with a partner. During the study all of the students seemed to enjoy working with each other, but more than half of the students indicated on the questionnaire that they were neutral or disliked working with a partner. My observations during the intervention sessions are that the activity ran smoother and the students performed better when working in partners than when working alone, but it was very important that the students were partnered by similar ability levels. The closer the partners were in reading level the better the activity went because the students were able to challenge each other and to maintain the rate of the activity that was on their level.
Limitations

Some limitations occurred during this study with the setting, materials, students, and interobserver agreement.

Setting

The study was conducted within a special education classroom. This location was problematic due to distractions and disruptions by other students. Occasionally the teacher had to stop intervention to help another student. At times other students needed to be told to quiet down because they were being too loud.

Materials

All students were required to read the same DIBELS passages regardless of their reading levels prior to the study. These passages proved to be too difficult for many of the participants. The DIBELS passages also increased in difficulty throughout the study. Therefore the students’ documented increased levels of reading fluency may not be entirely accurate since the passages were easier at the beginning of the study and more difficult at the end of the study.

Students

Frequent absences by many of the students were a significant limitation to the study. The truancy officer had to be contacted for two out of the six participants during
the study. Court action was taken against one of the student’s parents due to the number of unexcused absences.

Student attention and behavioral problems further limited the study. A majority of the participants have difficulty attending and have been diagnosed with attention deficit disorders. At times it was very difficult to get these students to maintain attention for the entire intervention session. One student refused to participate in four intervention sessions. Another student required medication for AD/HD as well as for emotional and mood disorders. There were many days that he did not receive his required medication, which affected his academic performance.

Interobserver Agreement

There was 92.8% agreement during the study. Interobserver agreement was collected in person by both the teacher and the teacher’s aide. Due to some of the students’ communication disorders it was sometimes difficult to determine whether or not words were read correctly. If the teacher and teacher’s aide disagreed on the number of words a student read correctly there was no way to go back and double check what the student read. This could have been remedied by audio taping the sessions.

Implications for Classroom Practice

The fluency building activity used in this study can easily be applied in a special or general education classroom setting. One of the advantages of the fluency activity is
that it is both fast and easy. The activity can be completed with short reading passages in
10-20 minutes. There is great flexibility in the reading material. The fluency activity can
be carried out with any type or level of reading material.

The fact that the activity is done with partners has many advantages for both
teachers and students. The students are required to actively respond and participate
throughout the activity, which increases practice and learning. The students learn and
develop cooperative skills throughout the activity by working together and taking turns.
The teacher can rotate groups quickly enabling each student to receive direct and
personalized instruction.

Directions for Future Research

The following list provides possibilities for future research in building oral
reading fluency and comprehension among students.

1. A replication of this study with students of differing ages, gender, and
   backgrounds. Examples include comparisons of students in a younger grade
   level versus older grade level, male vs. female students, and students in an
   urban school district versus students in a rural school district.

2. A replication of this study with students without disabilities in the general
   education classroom.

3. A replication of this study with students of differing special needs.
4. Implementation of the fluency building activity in several classrooms simultaneously while measuring and comparing implementation techniques and student fluency levels.

5. Implementation of the fluency building activity with additional factors in an attempt to increase student enjoyment and social validity.
SUMMARY

The purpose of this study was to develop and increase oral reading fluency in a group of six first and second grade students with multiple disabilities. It analyzed the effects of a reading fluency activity on student fluency levels. It also examined the effects of student fluency on levels of comprehension. The reading fluency activity used a combination of word practice in isolation (word flashcards), model reading (teacher reads aloud as students follow along), guided practice (students read along with teacher), and partner reading (students take turns reading) to build fluency.

Students participated in the fluency activity in groups of two and were grouped according to ability level (fluency levels were assessed prior to intervention). The students were assessed for levels of oral reading fluency during baseline and intervention sessions through 1-minute timed readings. The number of correct words the students were able to read during each 1-minute time period were tracked throughout the study. Students were assessed for comprehension through passage retells. After each 1-minute timed reading, students were asked to retell what they had read. The number of retell words that were connected with the passage during the child’s retell were counted and documented.

Results showed that the students’ rates of oral reading fluency increased with intervention. All six students demonstrated an increase in the number of words read
during the 1-minute timed readings when in intervention. Students also showed improvement on their reading fluency posttest scores following the conclusion of the study. Results also indicate that the students’ rates of comprehension increased along with their levels of reading fluency. Five out of the six students demonstrated an improvement in levels of comprehension when their levels of oral reading fluency increased.
REFERENCES


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<th>Student Number</th>
<th>Session Number</th>
<th>Session Date</th>
<th>Practice Passage</th>
<th>Number of Correct Words Read Per Minute</th>
<th>Number of Correct Words in Passage Retelling</th>
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Data Collection Score Sheet  
DIBELS Oral Reading Fluency First Grade

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APPENDIX B

PARENT LETTER AND CONSENT FORM
January 19, 2007

Dear Parent:

I am a professor in the college of education at The Ohio State University. My graduate professional student, Sarah Moore, and I will be conducting a research project in your child’s classroom that will last through the remainder of the 2006-2007 school year. We wish to see if the use of oral reading fluency activities will bring about improvement in your child’s oral reading fluency and overall reading levels. The focus of our project is to improve the number of words that your child is able to read in 1 minute time periods. We will be using a combination of word practice in isolation (word flashcards), model reading (teacher reads aloud as students follow along), guided reading (students read sentences along with teacher), and partner reading (students take turns reading and help fix errors) in implementing our study.

We hope that these strategies will help to increase the number of words that your child is able to read in 1 minute time periods, which will help them become rapid and smooth readers. Your child’s classroom teacher, who is also the co-investigator of this study, and instructional assistant will be directly involved in conducting the interventions, and monitoring your child’s performance during fluency activities.

We will review your child’s school records, and conduct periodic assessments to monitor his/her performance throughout the study. We will also be referring to your child’s multi-factored evaluation (MFE) and individualized educational plan (IEP) that is on file in the special needs classroom. All information collected about your child will be confidential. No one other than the researchers will use this information and your child will not be identified in any way to others.

We are requesting your permission so that we might use your child’s oral reading fluency performance as data in this study. Permission is purely voluntary and the decision to permit this access will not affect the way your child is treated or graded in school. Should you consent, please know that you can choose to withdraw your permission at any time during this project. If you have any questions, please feel free to contact me at 292-7629. Thank you for your attention and cooperation.

Sincerely,

Gwendolyn Cartledge, Ph.D.
Professor
January 2007

CONSENT FOR PARTICIPATION IN SOCIAL AND BEHAVIORAL RESEARCH

Protocol Title: “The Effects of an Oral Reading Fluency Activity on Student Fluency Levels.”

Protocol Number: Pending

Principal Investigator: Gwendolyn Cartledge

I consent to my child’s participation in research being conducted by Dr. Gwendolyn Cartledge of The Ohio State University and her assistants and associates.

The investigators have explained the purpose of the study, the procedures that will be followed, and the amount of time it will take. I understand the possible benefits, if any, of my child’s participation.

I know that my child can choose not to participate without penalty to me and/or my child. If I agree to participate, I can withdraw my child from the study at any time, and there will be no penalty.

I consent to the use of the following information from my child’s school records and academic records: attendance, individualized education plan, medical reports (if any), classroom test scores, and benchmark evaluations.

I have had a chance to ask questions and to obtain answers to my questions. I can contact the investigators at (614) 292-7629. If I have questions about my rights as a research participant, I can call the Office of Research Risks Protection at (614) 688-4792.

I have read this form. I sign it freely and voluntarily. A copy has been given to me.

Print the name of the participant: ______________________________

Date: _________________________  Signed: _________________________

(Printed name of participant)

Signed: _________________________  Signed: _________________________

(Principal Investigator or his/her authorized representative)  (Person authorized to consent for participant, if required)

Witness: _________________________

(When required)
APPENDIX C

PROCEDURAL INTEGRITY CHECKLIST
Teacher’s Behavioral Procedural Checklist
Directions: Observer is to indicate whether or not each step is accurately completed by the teacher (researcher) by placing a checkmark under the “Yes” or “No” columns for each step of the procedure.

<table>
<thead>
<tr>
<th>Did the teacher accurately complete each of the steps indicated below?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Call selected group of students to back reading table</td>
<td></td>
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<tr>
<td>2. Introduce activity</td>
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<tr>
<td>3. Conduct word practice</td>
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<tr>
<td>4. Test word knowledge</td>
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<tr>
<td>5. Reward students with marshmallows and goldfish crackers for correct answers during word knowledge</td>
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<tr>
<td>6. Perform model reading</td>
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<tr>
<td>7. Lead guided practice</td>
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<tr>
<td>8. Monitor partner reading</td>
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</tr>
<tr>
<td>9. Reward students with marshmallows and goldfish crackers for correct sentences during partner reading</td>
<td></td>
<td></td>
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<tr>
<td>10. Test reading knowledge</td>
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<tr>
<td>11. Students earn and count stickers and choose earned rewards out of reward tub (1 earned sticker for each completed session; 3 earned stickers earns a reward)</td>
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<tr>
<td>12. Individually administer DIBELS Oral Reading Fluency 1st Grade Assessment</td>
<td></td>
<td></td>
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</tbody>
</table>