Using Incremental Rehearsal for Building Fluency of Sight Words for Children with a Learning Disability

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An Action Research Proposal Presented to
The Graduate Program in Partial Fulfillment of the Requirements for the Degree of Masters in Special Education
Southern Illinois University Edwardsville
2017

Abstract

Incremental Rehearsal (IR) is an effective, evidence-based intervention for teaching words that uses high repetition and a high ratio of unknown and known items. The purpose of the present research study was to evaluate the effectiveness of using Incremental Rehearsal to improve the fluency in reading sight words for three elementary students diagnosed with a specific learning disability. A causal design was used to measure the efficiency of using Incremental Rehearsal to improve the ability to read sight words for the students. Multiple data points were used throughout this study including a pre-test, a duration of intervention, and a post-test. Data was collected over a span of six weeks for a four to five-minute session. Results indicated that there was a functional relationship between Incremental Rehearsal and the fluency of sight word reading and that the children's ability to read sight words fluently increased after the intervention.

Using Incremental Rehearsal for Building Fluency of Sight Words for Children with a Learning Disability

Reading is a fundamental skill that needs to be learned from an early age. Teaching reading becomes challenging when teaching children with learning disabilities. According to Candace (2014), "LD is the largest category of students receiving special education services" (p. 16). The majority of students with learning disabilities are struggling in reading (Lerner & Johns, 2011). During my observation in the elementary school in Midwest area, the researcher has learned from special education teacher that some of the second-grade students had a specific learning disability SLD in reading. Seventeen students have been diagnosed with a learning disability. An increase in recognition of sight words improves the other reading skills. Students who have a bank of sight words will find reading new texts more meaningful and easier, and they also can recall by sight effortlessly (Helman & Burns, 2008).

A learning disability is a neurological disorder, resulting from a difference in the way a brain develops (Heward, 2013). It is clear that a child with a learning disability can most certainly succeed academically and be successful in life with appropriate support and intervention (Swanson, 2013). Without the ability to read, it is difficult to succeed in many aspects of life. The lack of reading skills has been related to a variety of life problems, for instance, failing to complete school, developing behavioral issues, and having difficulty with getting jobs (Ulring et al., 2012). Therefore, we cannot ignore the importance of reading skills for everyone.

Intervention is a necessary educational concept as schools continue to address the diverse needs of students (Volpe et al., 2012). Incremental Rehearsal builds student fluency by

combining unknown items with a gradually increasing set of known items. This intervention makes use of intensified practice to promote the fluency and guarantees that the student will experience a high percentage of success. Incremental Rehearsal strategy is used with students struggling to retain skills such as reading sight words, math facts, or spelling. It offers one-on-one format, and it can be used as a Tier 2 or Tier 3 intervention.

The studies show that Incremental Rehearsal has a greater effect than traditional methods of practice and drill to improve the ability to read for students with learning disabilities (Volpe et al., 2012; Rahn et al., 2015; Burns et al., 2004). We should provide first-hand experiences for children with learning disabilities. That can allow them to create connections between their experiences at school and experiences out of school. Flash cards are a good way to involve and engage the students. This intervention also can provide some formative assessment and let the teacher determine whether or not a student is understanding the skill (Derakhshan & Khatir, 2015).

The purpose of the present research study was to evaluate the effectiveness of using Incremental Rehearsal to improve the fluency in reading sight words for three elementary students diagnosed with a specific learning disability. The research question guiding this study was what is the effect of Incremental Rehearsal on sight word fluency for children with a learning disability? The hypothesis is that if the students are using Incremental Rehearsal (IR) to replace the traditional ways of practice and drill, then the fluency in reading sight words will improve.

LITERATURE REVIEW

This study followed three themes. First, the literature review provided a description of learning disabilities. Second, I presented research regarding reading fluency and word recognition as critical factors of reading and as intervention targets. Third, I presented evidence supporting the use of a flashcard intervention called Incremental Rehearsal which may be used to improve the fluency of sight words recognition.

Learning Disabilities

Managing students with disabilities is challenging for both professionals at schools and families in homes (Olanrewaju et al., 2015). The major challenges facing teachers and other professionals in meeting the social, behavioral, cognitive, perceptive and motor needs of children with learning disabilities in the classrooms are how to select the appropriate strategies, how to use them, and how to evaluate its efficiency (Adebisi, Liman, & Longpo, 2015). According to Adebisi and colleagues (2015), "A learning disability, according to the Individuals with Disabilities Act (IDEA), is a disorder in one or more of the basic cognitive abilities involved in understanding or using spoken or written language. This could lead to an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations" (p. 15). learning disability is a neurological disorder, and it results from a difference in the way a brain develops (Williams & McLaughlin, 2005; Seines et al., 2015). Students with learning disabilities have normal or above normal intelligence. The majority of students receiving special education services are identified as having a learning disability.

According to Cortiella and Horowitz (2014), there are 2.4 million American students in public schools who have been diagnosed with learning disabilities under the Individuals with Disabilities Education Act IDEA—around five percent of the total public school enrollment. The

most important thing for teachers and parents to know is that students with disabilities need to have their learning goals work with their strengths while being aware of their weaknesses (Seines et al., 2015).

Students with learning disabilities grow up with learning differences. With the continuance of appropriate instructions, they could highly improve and achieve their potential (Adebisi, Liman, & Longpo, 2015). The studies have found that 90% of children with learning disabilities receive special education services for reading issues (Seines et al., 2012). Teaching reading becomes more challenging when teaching students with learning disabilities who have difficulty grasping concepts and skills. Reading is a struggle for the students with learning disabilities. They need more time to gain proficiency of a specific skill (Rich et al., 2016).

Reading Fluency

Reading is the basic skill upon which all formal education depends. Reading is a very essential and vital skill; it is also a complex task that includes various skills including reading fluency, word recognition, word study, and conceptual understanding (Zadeh et al., 2012). The consequences of early reading failure necessitate the provision of interventions of early literacy to struggling readers (Volpe et al., 2012). The lack of reading skills has been linked to a variety of life problems. According to Ulring (2012), reading fluently and accurately is a critical reading skill. In general, students who are fluent readers can comprehend what they read.

It is necessary to start learning to read early for children so that they can build up their reading skills for more challenging tasks and assignments in the future. Reading often begins in kindergarten, clearly by first grade, and basic instruction continues throughout third grade. Reading ability is the main academic focus in the classroom. Reading fluency is known as an essential element of every reading program, especially for students who struggle in reading

(Burns, Dean, & Foley, 2004; Rich et al., 2016). A student's inability to read, and read fluently, limits comprehension and ultimately affects all content areas. It is necessary that children receive early and appropriate learning experiences that promote the acquisition of literacy skills. The research states that fluency is one of the critical factors necessary for reading comprehension and that it is often a component ignored by many classrooms (Hudson, Lane, & Pullen, 2005; Romjue, McLaughlin, & Derby, 2011; Matchett & Burns, 2009). Effortless and fast recognition of words is important for successful reading. Word recognition is necessary to reading fluency, which includes both effortless and quick recognition of words in a text (Brown & Burns, 2011).

Reading fluency is also important since fluent reading has been consistently connected to comprehension. The terms comprehension and fluency are not synonymous. Fluency is necessary for comprehension, but effortless and fast word recognition is essential for fluency. Therefore, successful efforts to develop word recognition could improve the fluency, which also would improve comprehension. The students with learning disabilities often need direct instruction in how to read fluently and practice the fluency (Burns, Dean, & Foley, 2004). Teachers who are concerned about meeting the needs of all students in their classrooms should consider and identify the students who are having difficulties with fluency and what types of instruction they want to provide for those students.

Incremental Rehearsal

Incremental Rehearsal (IR) is an explicit and systematic intervention that teaches new concepts by combining them with known concepts. In Incremental Rehearsal, an interventionist displays unknown words one at a time along with a high number of known items (80% to 90% of items used are known items) to preserve a high rate of success. Moreover, Incremental Rehearsal (IR) uses high repetition, gradual introduction of unknown items, and a high average of success

because of the level of known concepts (Burns et al., 2004; Burns, 2007; Brown & Shawna, 2013). The previous research has found that Incremental Rehearsal is an effective way to improve the retention and acquisition of sight words (Swehla et al., 2016). Research has shown that strategic pre-teaching activities lead to developed reading fluency, but more studies are needed to investigative the effect on reading comprehension (Burns et al., 2004).

The studies show that Incremental Rehearsal has a greater effect than traditional ways of practice and drill (Rahn et al., 2015). According to Burns and colleagues (2004), Incremental Rehearsal has been used as a pre-teaching intervention for students with specific learning disability (SLD) and was shown to improve fluency and comprehension. Pre-teaching unknown words to students with reading difficulties could be an effective intervention, but it may also be effective teaching. However, pre-teaching is often an overlooked strategy that can be especially useful for difficult tasks. Therefore, pre-teaching unknown words to students with reading difficulties is an essential component of effective instruction.

Volpe and colleagues (2012), investigated the effectiveness of Incremental Rehearsal intervention to improve fluency and letter sound knowledge with four kindergarten students. Participants were selected since they were not making expected improvement toward benchmarks on letter sounds. Results showed that all four participants improved their letter sound knowledge and fluency over the course of 25 intervention sessions.

Similarly, the research investigated the effect of teaching unknown words with twenty students diagnosed as learning disabled in basic reading skills and reading comprehension as a pre-teaching strategy (Burns et al., 2004). Incremental Rehearsal has been applied as a pre-teaching intervention for students with SLD. The result of using Incremental Rehearsal strategy

was shown to enhance reading fluency and comprehension. The researchers found that this practice and technique procedure is effective for teaching students in the gaining stage of learning since it allows for teaching to mastery, allows the opportunity to respond, presents unknown concepts in small sets, provides repetition, and promotes learning. The student knows approximately 90% of the concepts with 10% of unknown concepts interspersed with known concepts (Burns et al., 2004; Klingbeil et al., 2017).

The Nist and Joseph (2008) study compared three flashcard approaches in teaching word recognition to six first grade students diagnosed as struggling learners. The three techniques were a traditional drill (TD), Interspersal Training (IT), and Incremental Rehearsal (IR). In Traditional Drill (TD), a word is a presented for a student, the student restates the word upon every subsequent presentation, and unknown words are rehearsed by presenting them randomly until each has been learned. Interspersal Training (IT) is similarly a flashcard technique but uses six unknown words and three known words (Joseph, 2006; Kupzyk et.al, 2011). Incremental Rehearsal (IR) is also a flashcard technique, but the known words are introduced between each presentation of an unknown word.

As reviewed previously, research indicates that using Incremental Rehearsal to teach word recognition has been linked to increased generalization and high retention through reading comprehension and greater oral reading fluency (Burns, 2007; Burns, Dean, & Foley, 2004; Volpe et al., 2012). Nist and Joseph (2008) found that Incremental Rehearsal leads to more than 90% retention for five of the six students, TD leads to 78%–85% retention and IT leads to 83%–90% retention. Although Incremental Rehearsal IR needs more time to complete, this technique has various benefits over the other approaches such as spaced repetition, errorless learning, and high opportunities to respond. (Burns et al., 2004; Nist and Joseph 2008; Volpe et al., 2012)

These results were consistent with previous research that found Incremental Rehearsal to be an effective way to improve the word fluency and comprehension.

The research question guiding this study was what is the effect of Incremental Rehearsal on sight word fluency for children with a learning disability? The hypothesis is that if the students are using Incremental Rehearsal (IR) to replace the traditional ways of practice and drill, then the fluency in reading sight words will improve.

METHOD

Research Design

The research question in this study was what is the effect of Incremental Rehearsal on sight word fluency for children with a learning disability? The purpose design for this research is Causal design; this design type is used to measure to evaluate the effect of the Incremental Rehearsal intervention on the dependent variables (sight words fluency) to three-second grade students with specific learning disability.

Multiple data points were used throughout this study including a pre-test, a duration of intervention, and a post-test. I also used both Incremental Rehearsal field notes and Incremental Rehearsal Cold Probe Data. At the beginning of this study, the researcher examined student knowledge on all sight words sets. When a baseline was created, the intervention was implemented with the set of sight words.

Participants

Participants were three second-grade students. All participants attended the same public

elementary school in a Midwest urban district. The school contains 77% white, 13% Black, 5% Hispanic, 2% Asian, 5% two or more Races, 1% English learners, 11% students with disabilities, and 3% Homeless. Students were selected for intervention given their need for additional instruction on sight words. All of the students have a learning disability in basic reading skills. all of the participants qualified to receive special education services. All students are in a general education classroom with one general education teacher and one special education teacher or assistant. All students are receiving Tier two or three interventions for reading five times per week for forty-five minutes a day. They are also receiving small group instruction in reading for forty-five minutes three times per week with the special education teacher. The special education teacher recommended these participants for the study due to their low performance levels in reading. The intervention took place in a special education classroom.

Participant 1. Enrique is an eight-year-old male. He was previously held back in first grade. He is currently receiving tier two support in reading. He has difficulties with basic reading skills, attention span, and following directions. Enrique also seems to have a difficult time transitioning from activities. According to Aims Web Benchmarks, he is between the 10th and 25th percentile for fluency and math application and in the twenty-fifth percentile for math computation.

Participant 2. Haley is an eight-year-old female. The primary eligibility is Other Health Impaired. She is diagnosed with ADHD–she takes medication. She was monitored by a special education teacher from Kindergarten to first grade. Due to difficulties with reading, she began receiving services for reading in first grade. Haley has continued to struggle with math and currently receives tier three services. According to Aims Web Benchmarks, she is between the tenth and twenty-fifth percentile for fluency and math computation, the tenth percentile for math

application.

Participant 3. Alivia is an eight-year-old female. She is currently being evaluated to determine if she qualifies for special education services. She has been receiving tier three services along with small group instruction for reading. Alivia has difficulty with attention and focus, basic reading, reading comprehension and writing. She requires a lot of support in math due to attention and reading difficulties. According to Aims Web Benchmarks, she is between the tenth and twenty-fifth percentile for fluency and twenty-fifth -fiftieth percentile for math application, and fiftieth –seventy-fifth percentile for math computation.

Procedures

Materials of different varieties were used in this study including lists of sight words from second-grade level Dolce. The lists were provided by the school district (http://www.k12reader) (see Appendix A). I also used both a timer to set the time for one minute and highlighters to highlight the missed words. In addition, I implemented 3x3 inch cardstock flashcards with an individual word printed on each card. Each flashcard had a different sight word taken from the second-grade sight words lists.

Phase A. The researcher contacted the principal of the elementary school to recruit his participation. The consent forms were sent home with children receiving special education services to get written permission, and the parents needed to return the signed consent forms before starting data collection. The researcher provided the pre-test to the students to examine the students' level before beginning intervention and baseline. The pre-test was made by using the second grade sight word list from the Wonders program. The participant was given a list of words to read while the researcher had the same list to mark incorrect words while testing the participant. The researcher set the timer for one minute. If the participant took longer than 3

seconds to read the word, then the word was considered to be incorrect **(**See Table 1). From the information collected from the pre-tests, the missed words were used to create flashcards as unknown words, and additional words for flashcards were randomly selected from the sight words lists of second grade (See Appendix A).

Intervention Phase B. Students were seen individually in the resource room. The sessions of Incremental Rehearsal Intervention took approximately four to five minutes per participant. I presented unknown words and rehearsed one word at a time using Incremental Rehearsal until the child made three errors while rehearsing one word. Therefore, a number of unknown words presented to each student varied based on the student's acquisition rate.

Prior to the intervention session, I randomly selected three unknown words and nine known words. Every unknown word was rehearsed with nine known words to keep ratio for drill tasks. I marked behind the card if the card is unknown words or known words to help me differentiate between unknown and known words during intervention sessions. Each session of Incremental Rehearsal starts by presenting the first unknown word. The participant was asked to read the word aloud, and if the participant responded incorrectly, I provided direct error correction.

In the first sequence, he first unknown word was displayed by the researcher, (i.e., this is want). The researcher then asked the student to read the word (i.e., want) and confirmed a correct response (i.e., great this is want) or corrected an incorrect response. Then, started the first Incremental Rehearsal sequence. The researcher showed the first unknown word again and asked the student to read it. (i.e., "What is this word?"). After recognizing a correct answer or correcting an incorrect answer, the unknown word was shown again, followed by one known

word. The unknown was then shown again (i.e., want) followed by the first known sight word and a second known word (i.e., what, want). This procedure continued until the unknown sight word and all nine knowns words were displayed, thus giving the student opportunities to read the unknown sight words. The researcher will present the cards in the following order: (*first unknown*, first known, *first unknown*, first known, second known, *first unknown*, first known, second known, third known, *first unknown*, first known, second known, third known, fourth known). This procedure was repeated for the second unknown word. However, the first unknown word became the first known word, and the ninth known word from the last sequence was removed. Thus, an 80%-to-20% of known to unknown words was maintained. The ranged number of intervention sessions from six to eight weeks.

Baseline2. As reported in table 1, after the intervention was taken, the researcher provided the post-test to the students to examine the students' level after the intervention. The post-test was made by using the sight words lists of second grade (See Appendix A). The participant was given a list of words to read while the researcher had the same list to mark incorrect words while testing the participant. The researcher set the timer for one minute. If the participant took longer than three seconds to read the word, then the word was considered to be incorrect. From the information collected from the post-tests, the researcher could determine the changes in the fluency of reading sight words.

Data collection

Various forms of data were collected in this study. Baseline data was compiled using a pre-test that assessed the participants' sight word fluency (see Appendix A). The researcher then compared the pretest to the posttest of the study participants. All scores of students in the pre-

and post-test were shown in the graphs as evidence for the effectiveness of Incremental Rehearsal strategy. The researcher used causal design on this research. Causal design involves finding the effect of one variable, the Incremental Rehearsal, on another variable, reading sight words fluency. The dependent variable is the sight words knowledge, and the independent variable is Incremental Rehearsal. The dependent variable will improve when we add the independent variable. The question here is whether or not IR increases the fluency of sight words knowledge.

The data of each student's pre- and post-test were collected before and after the intervention. The researcher collected field notes of the participants' response and fluency while reading the sight words during each session (see Appendix A). During each session, students were given the Incremental Rehearsal intervention. Data was taken during the intervention regarding whether or not the students can read the sight words with fluency and accuracy. The researcher used the Incremental Rehearsal Cold Probe Data to determine the level a child had mastered without any incentives (See Appendix C). The researcher highlighted the word if a student can not read it or takes longer than three seconds to retrieve the word. The students' correct answers were recorded in the tables and also presented on the graphs in percentages.

Data analysis

The proposed design for this research project is a causal design. This design type is used to measure the effectiveness of using Incremental Rehearsal to improve the ability to read sight words for three elementary students diagnosed with a specific learning disability. The causal design in this study looked at the effect of Incremental Rehearsal on second-grade students with a learning disability. The pre-test data was analyzed by examining the students' level before

starting intervention and baseline. The researcher gave a pre-test to the students by using the sight word lists of second grade. The students were given the Incremental Rehearsal intervention during each session. Data was taken during the intervention to determine whether or not the students could read the sight words with fluency and accuracy using field notes. The researcher collected field notes of the participants' response and fluency and recorded the students' feelings while reading the sight words during each session. The collection of field notes data was analyzed by finding themes in the participants' feelings. A different color was used to mark the different themes in the participants' responses. The researcher used the Incremental Rehearsal cold probe data to determine the level a child had mastered without any incentives. The participants' scores in the probe data were analyzed and presented in the graph as a proof on the effect of using Incremental Rehearsal on students with a learning disability.

RESULTS

Does Incremental Rehearsal improve the ability to read sight words for children with learning disabilities? That was my research question. I hypothesized that if the students are using Incremental Rehearsal (IR) to replace the traditional ways of practice and drill, then the fluency in reading sight words will improve. The results proved the researcher's hypothesis.

In the current study, the data were collected for the baseline through the pre-test and the post-test along with the cold probe data and field notes during the intervention. First, baseline data was taken before I began the intervention. The participant was given a list of words to read while the researcher had the same list to mark incorrect words while testing the participant (See Appendix A). The researcher set the timer for one minute. If the participant took longer than three seconds to read the word, then the word was considered to be incorrect **(**See Table 2). The

second baseline data was taken after the intervention. The participant was given the same sight word list (See Appendix A) to read while the researcher had the same list to mark incorrect words while testing the participant for the post-test. The result in Table 1 of my study indicated that the fluency of sight words has been increased after I did the intervention. Data was collected over a span of six weeks for a four to five-minute session.

Table 1. ***Missed Words on Pre-Test and Post-Test***

STUDENTS	PRE TEST	POST TEST
ALIVIA	5	1
HALEY	8	0
ENRIQUE	6	0

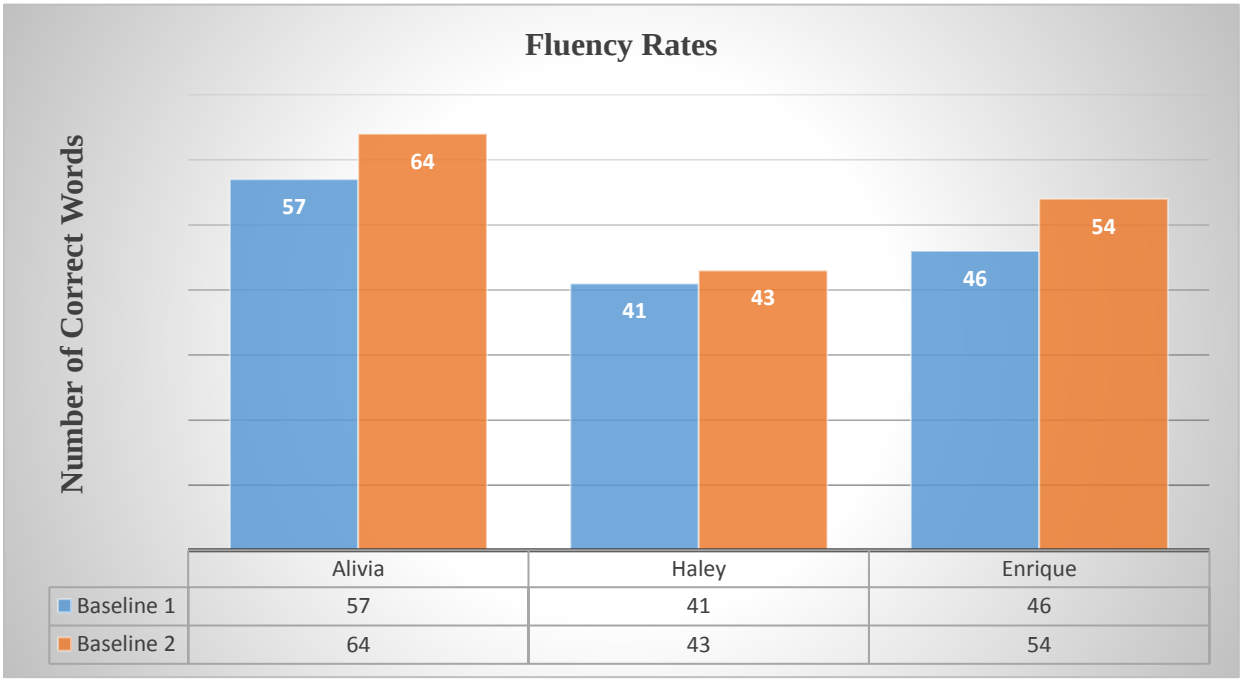
Participant 1. As shown in figure 1, during the baseline for the sight word list (See Appendix A), Enrique read 46 words correctly, and he made six errors. Throughout the Incremental Rehearsal intervention, there was an increase in his performance (Figure 2). He finished the post-test by reading 54 words correctly in 1 minute with no errors from the sight word list. The range in scores was seven to 12 correct. His accuracy percentage range of fluency was 58% to 100%. He started of with 58% and increased to 100% within average score of eight.

Participant 2. As shown in figure 1, during the baseline for the sight word list (See Appendix A), Alivia read 57 words correctly, and she made five errors. Throughout the Incremental Rehearsal intervention, there was an increase in her performance (Figure 2). She finished the

post-test by reading correctly 64 words in 1 minute with one error from the sight word list. The range in scores was five to 12 correct. Her accuracy percentage range was 42% to 100%. She started of with 42% and increased to 100% within average score of eight.

Participant 3. As shown in figure 1, during the baseline for the sight word list (See Appendix A), Haley read 41 words correctly in 1 minute, and she made eight errors. Throughout the Incremental Rehearsal intervention, there was an increase in her performance (Figure 2). She finished the post-test by reading 43 words correctly in 1 minute with no errors from the sight word list. The range in scores was five to 12 correct. Her accuracy percentage range of fluency was 42% to 100%. she started of with 42% and increased to 92% within average score of seven.

Figure 1. ***Averaged Pre-Test and Post-Test Scores***

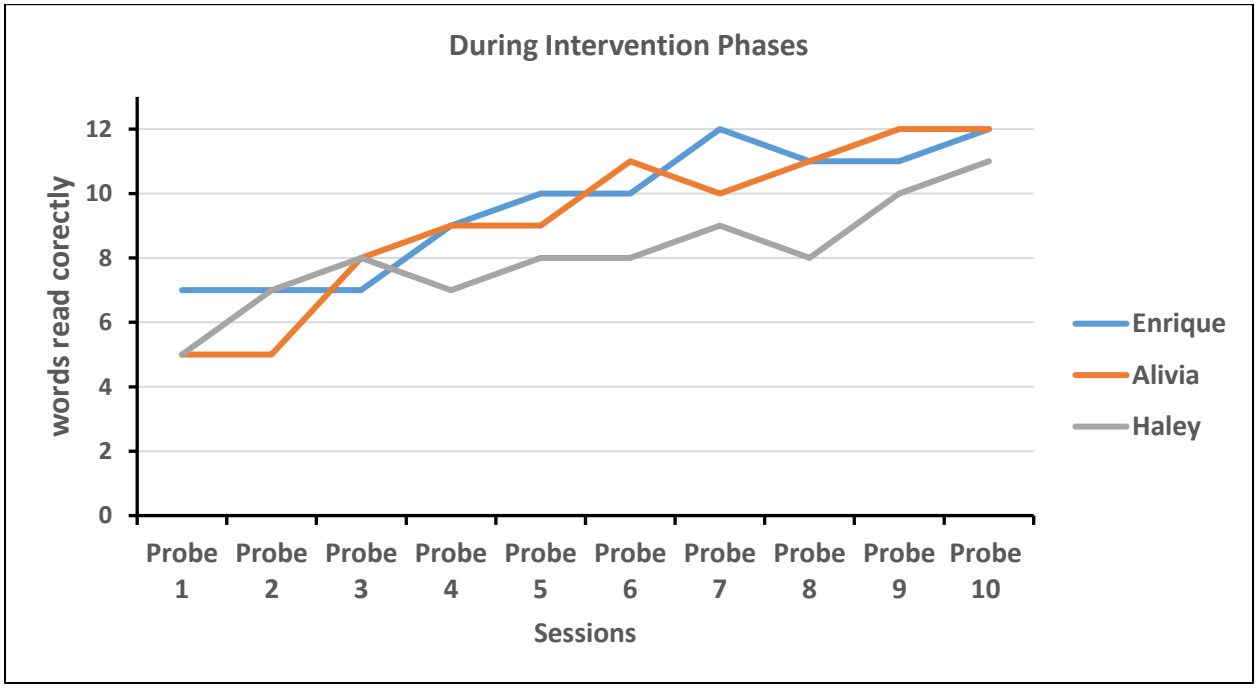


As reported in Figure 2, similar patterns happened for all three participants. Enrique's performance was steady in the first two sessions, and then his performance suddenly increased.

However, Alivia's performance immediately improved during IR intervention, and this improvement was consistent. Haley's performance was low in the beginning, but there was an increase in her performance by the middle of intervention.

Each participant's scores of reading sight words fluently in Figure 2 during Incremental Rehearsal (IR) intervention was taken from the Incremental Rehearsal cold probe data record (See Appendix C). The researcher used the Incremental Rehearsal cold probe data record to determine the level a child had mastered without any incentives. As shown in the Figure 2, there was an increase in their performance during the intervention phase, and their ability to read sight words fluently has been increased. Visual analysis indicated that there was a functional relationship between Incremental Rehearsal (IR) and the fluency of sight word reading.

Figure 2. ***Averaged Intervention Data***



DISCUSSION

Incremental Rehearsal (IR) is a strategy that displays unknown words one at a time along with a high number of known items to help improve the fluency for the student with a learning disability. As a second language learner, I learned new words by using flashcards that are similar to the Incremental Rehearsal. Actually, I faced difficulties learning new words. One of my teachers used the flash cards to teach us new vocabulary. It was a really effective technique that combined learning and fun. I believe that learning sight words promote reading comprehension since sight words represent over half of English text. I believe that a child who has learned the list of sight words can recognize at least half of a sentence. Instead of trying to break down the meaning of all the words in a sentence, the student can focus on the words, which he is not familiar with. Since the student already knows at least half of the words in the sentence, this helps him to be more confident when he reads the text. Findings from this study prove researcher's hypothesis that if the students are using Incremental Rehearsal (IR) to replace the traditional ways of practice and drill, then the fluency in reading sight words will improve. As shown in Figure 2, the children's performance has increased during the intervention sessions, and their ability to read sight words fluently has improved. I hypothesized that if the students are using Incremental Rehearsal (IR) to replace the traditional ways of practice and drill, then the fluency in reading sight words will improve. The results proved the researcher's hypothesis.

During the intervention, I wrote in the field note, "Alivia was always excited, and she focused on the task. Her improvement was evident; she was getting the highest score in the pre- and the post-test. There was increased in her fluency rate since she started off with 42% and increased to 100% within an average score of 8."

I also wrote in the field note, "Enrique was happy and excited in every session but in

post-test, he seems a bit confused, and he was trying to read all the words correctly; that made him somewhat nervous. In fact, there was improved in Enrique's fluency rate since he started off with 58% and increased to 100% within an average score of 8."

In addition, I wrote in the field note, "Haley always felt bored, and she did not get excited to do the task." Before we did the post-test she kept saying, "I know I will miss some words from the list." However, "She did a great job on the post-test, and she was surprised and so happy since she could read the list of words in one minute without missing any word." In addition, I noted, "There was an increase in Haley's fluency rate. She started off with 42% and increased to 92% within an average score of 7." Furthermore, I wrote in the field note, "The intervention took no more than four to five minutes for each participant. Most of the time, the participants were excited to do the Incremental Rehearsal. Since I used 80% known words, they felt happy since they could read most of the words from the flashcards".

Limitations of the Study

From the results above, it is obvious that there was a significant difference between pre-test and post-test. The results from this study showed that IR had an effect on reading sight word fluency for all three participants. For children with learning disabilities, Incremental Rehearsal also influences the fluency of reading sight words. The students' performance increased after I did the intervention. I hypothesized that if the students are using Incremental Rehearsal (IR) to replace the traditional ways of practice and drill, then the fluency in reading sight words will improve.

Although the study has reached its aim, there are some limitations. First of all, the study was done for three elementary students within six weeks. Actually, six weeks is not enough time for me to observe the performance of all of the students. It would be better if the study was done

over a longer period of time. Second, during the six weeks, I had planned to do the intervention twice a day, in the morning and afternoon. Due to the limited time and late students, there was not enough time to take them to the resources room and back to their classroom twice a day. Additionally, twice there were conflicts in their schedules with speech therapy. Therefore, I had to wait until they finished, leaving me unable to complete the intervention on time. Third, in my study, there were some variables that had a negative impact on the students. For instance, distractions such as noise and the need to switch classrooms three times made things difficult. Furthermore, I have learned that if students with a learning disability have more time without noises or other disturbances, they are more focused on the strategy. The more time students spent in learning words with Incremental Rehearsal, the better results they had.

Implications for Future Study

For further research, it was obvious that Incremental Rehearsal (IR) had a positive effect in improving the fluency of sight words for children with learning disabilities. Even though research has shown that Incremental Rehearsal leads to a more developed reading fluency, more studies are needed to investigative the role this strategy would play in reading comprehension. The sessions in this research were done one-on-one and usually, teachers have limited time to do one-on-one instruction. Therefore, future research should examine if the IR can be adapted to small groups. I also suggest that future research might examine the sequence of Incremental Rehearsal with seven cards instead of twelve to avoid boring the student and to save time. Four of these cards should be known words and three should be unknown.

By conducting this study, I found Incremental Rehearsal strategy is beneficial, especially for students with a learning disability because it uses high repetition, gradual introduction of unknown items, and a high average of success because of the level of known concepts. In fact,

this study not only supported the students, but it also supported me to become a more effective educator and to look for an appropriate strategy for children with LD to learn new concepts. I have also expanded my knowledge about learning new strategies to teach new words for the students with learning specific disabilities. This study helped me to take a closer look at not only Incremental Rehearsal strategy but also at the children's individual needs.

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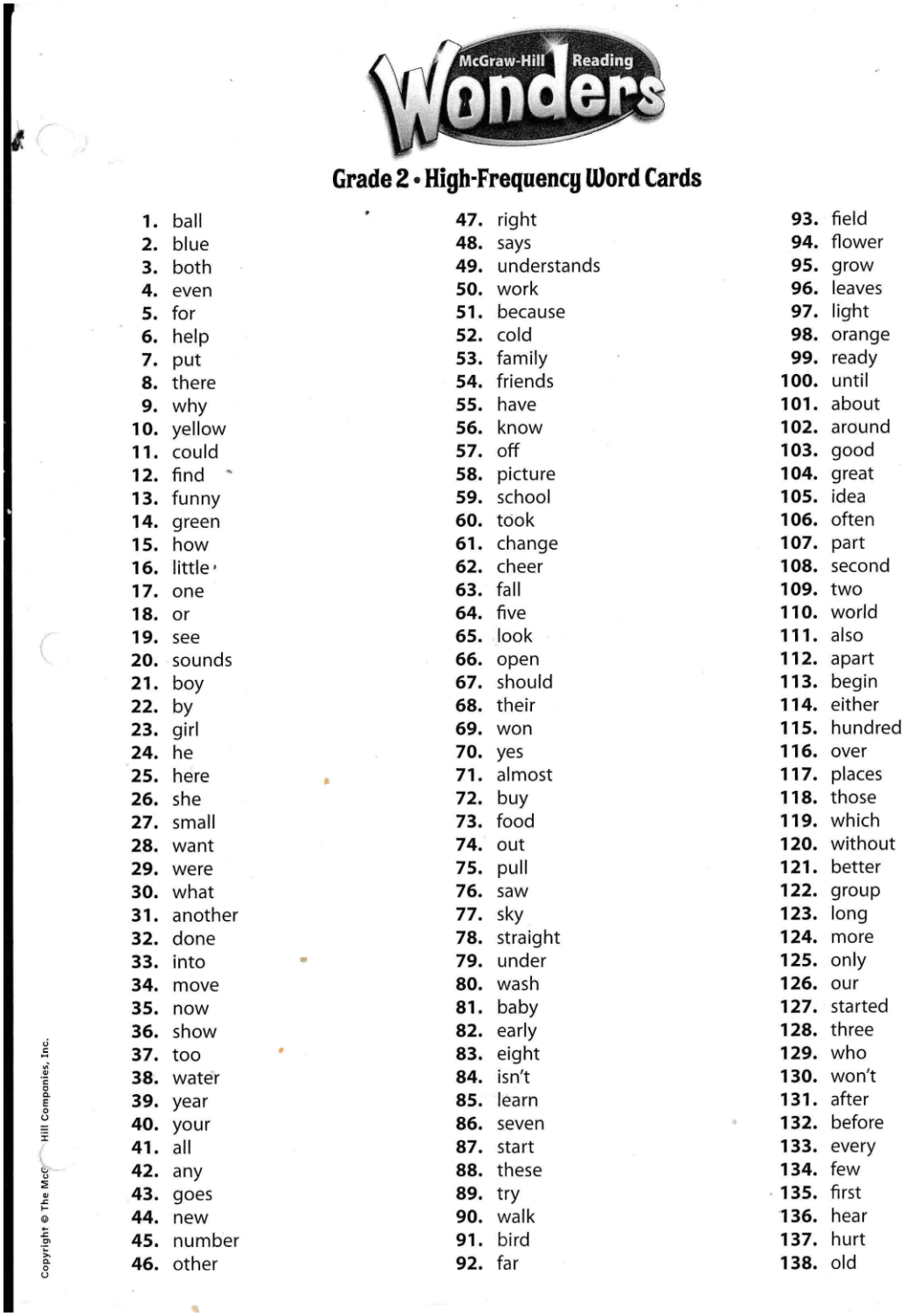
APPENDIX

Appendix A. Second Grade Sight Words.

Name: _____



McGraw-Hill Reading Wonders

Grade 2 • High-Frequency Word Cards

1. ball
2. blue
3. both
4. even
5. for
6. help
7. put
8. there
9. why
10. yellow
11. could
12. find
13. funny
14. green
15. how
16. little
17. one
18. or
19. see
20. sounds
21. boy
22. by
23. girl
24. he
25. here
26. she
27. small
28. want
29. were
30. what
31. another
32. done
33. into
34. move
35. now
36. show
37. too
38. water
39. year
40. your
41. all
42. any
43. goes
44. new
45. number
46. other
47. right
48. says
49. understands
50. work
51. because
52. cold
53. family
54. friends
55. have
56. know
57. off
58. picture
59. school
60. took
61. change
62. cheer
63. fall
64. five
65. look
66. open
67. should
68. their
69. won
70. yes
71. almost
72. buy
73. food
74. out
75. pull
76. saw
77. sky
78. straight
79. under
80. wash
81. baby
82. early
83. eight
84. isn't
85. learn
86. seven
87. start
88. these
89. try
90. walk
91. bird
92. far
93. field
94. flower
95. grow
96. leaves
97. light
98. orange
99. ready
100. until
101. about
102. around
103. good
104. great
105. idea
106. often
107. part
108. second
109. two
110. world
111. also
112. apart
113. begin
114. either
115. hundred
116. over
117. places
118. those
119. which
120. without
121. better
122. group
123. long
124. more
125. only
126. our
127. started
128. three
129. who
130. won't
131. after
132. before
133. every
134. few
135. first
136. hear
137. hurt
138. old

Appendix B. Incremental Rehearsal Field Notes

Student's Name: _____

Date	Incremental Rehearsal

Appendix C. Incremental Rehearsal Cold Probe Data

Name: _____

Date									
# Correct									

Date									
# Correct									

Date									
# Correct									

Date									
# Correct									

Date									
# Correct									