

A Look into the Dyslexic and ADHD Mind

How does ADHD play a part in a Student with Dyslexia's Reading Comprehension and Fluency?

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Author Note

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Abstract

This paper explains the relationship between a student with dyslexia and a student with both dyslexia and attention deficit hyperactivity disorder (ADHD). In elementary schools across the country there is a rise in the number of students with dyslexia and students with attention deficit disorder or attention deficit hyperactivity disorder. This paper examines how interventions can benefit students with dyslexia versus how interventions can benefit students with dyslexia and attention deficit hyperactivity disorder. The research described in this paper compares two students that are on the same reading level and both struggle with reading comprehension and fluency. Students are assessed to find out how ADHD combined with dyslexia plays a part in students processing. I will be comparing how interventions can help students reading level improve through work with fluency and comprehension. This paper explains each component of the process starting with assessments, going into interventions, the results, and a summary. It also explains how this process of interventions and assessments can help students with dyslexia and ADHD in the future.

Keywords: Dyslexia, Attention Deficit Hyperactivity Disorder, ADHD, Attention Deficit Disorder, ADD, Reading Comprehension, Fluency, Students, Assessment, Intervention, Education

A Look into the Dyslexic and ADHD Mind

How does ADHD play a part in a Student with Dyslexia's Reading Comprehension and Fluency?

Currently in the United States of America 15 to 20 percent of the population struggle with dyslexia. Of that 15 to 20 percent, 3.5 percent are receiving a service for a reading disability (International Dyslexia Association, 2017). That is an alarming amount for the number of people who are struggling with dyslexia and are not receiving the support they need to succeed. Studies also estimate that between 20 and 40 percent of all people who have dyslexia also have attention deficit hyperactivity disorder (ADHD) (Society for Neuroscience, 2004). For this study, I will be focusing on how intervention can benefit students with dyslexia versus how intervention can benefit students with dyslexia and ADHD.

According to the Mayo Clinic (2017), dyslexia is defined as a learning disorder that involves difficulty reading due to problems identifying speech sounds and learning how they relate to letters and words (decoding). Also called a reading disability, dyslexia affect areas of the brain that process language. People with dyslexia have normal intelligence and usually have normal vision, from the outside they seem completely "normal." The majority of students with dyslexia can succeed in school with tutoring and extra help. This is why early and continuous intervention is so important for students with dyslexia. The earlier response to intervention, the more likely the student will succeed in the future. Symptoms of dyslexia may lessen over time but a student's dyslexia will never go away. Dyslexia is hereditary, which means it runs in families. It appears to be linked to certain genes that affect how the brain processes reading and language, as well as risk factors in the environment.

By definition recorded with the Mayo Clinic (2017), ADHD is a chronic condition that affects millions of children and often continues into adulthood. ADHD includes a combination of

persistent problems, such as difficulty sustaining attention, hyperactivity, and impulsive behavior. Children with ADHD also may struggle with low self-esteem, troubled relationships, and poor performance in school. Like dyslexia, symptoms of ADHD sometimes lessen with age, when intervention and tutoring are implemented. However, some people never completely outgrow their ADHD symptoms. They can learn strategies to be successful, reiterating the importance of early intervention for students with ADHD to help them be successful in school. ADHD has no known cause as of now. Many researchers have theorized about its cause but there is no main cause of ADHD. Factors that may be involved in the development of ADHD include: ADHD can run in families, and studies indicate that genes may play a role. Also, certain environmental factors, such as lead exposure, may increase risk. Finally, problems with the central nervous system at key moments in development may play a role.

There is a very strong link between ADHD and dyslexia. According to the Mayo Clinic (2017), children who have dyslexia are at increased risk of having ADHD, and vice versa. ADHD can cause difficulty sustaining attention as well as hyperactivity, and impulsive behavior, which can make dyslexia harder to treat. When a student has both dyslexia and ADHD, usually they have a harder time progressing in school than a student that just has one or the other.

Research Process

For this study I will be comparing two students: Student A will have dyslexia and Student B will have dyslexia and ADHD. I will be comparing how interventions can help these two students in the classroom. I will also be determining if their learning disabilities make any difference. Both students will be selected from The Roberts Academy at Florida Southern College by their classroom teachers. Both students will have a reading issue regarding fluency and they will both be at the same grade level. Each student will go through the process of

completing assessments to double check what grade level of reading they are at and also what specific area of fluency they are struggling with, whether that be their rate, accuracy, and/or prosody. Then once assessments are administered and analyzed, the interventions will begin to help improve the student's fluency skills. After all assessments and interventions have been completed the data will be analyzed and compared to see how the students improved. Based on their growth conclusions will be drawn on whether dyslexia and ADHD are an impeding factor when interventions are taking place. I hypothesize that interventions will be able to help both the student with dyslexia and the student with dyslexia and ADHD, but the student with just dyslexia will be able to improve at a faster rate and also improve more than the student with dyslexia and ADHD. Because the student with dyslexia may improve at a faster rate I also hypothesize that this will allow the student to be able to better comprehend the text since they are reading the text more fluently.

Pre-Assessments to be Administered

The first assessment administered was a self-created Interest Inventory. An Interest Inventory is an assessment where the teacher asks the student multiple questions to get to know the student better to help gear future assessments towards their interests. This is especially important for students with dyslexia and students with dyslexia and ADHD because they already have a negative connotation towards reading, so as a teacher you want to be able to gear their interventions toward things they are interested in to make sure they are motivated and focused during the interventions. Among some of the questions that the Interest Inventory asked are: What do you like about school? What is your favorite subject? What is your favorite animal? What do you want to be when you grow up? The Interest Inventory tells the teacher what the students are interested in and helps them know what types of things will motivate the student.

The next assessment administered was the Words Their Way Spelling Inventory (Bear, Templeton, & Johnson, 2016). The Words their Way Spelling Inventory is a spelling test given to determine what spelling stage a student falls under. The way it is administered is you first give the student the word, then read that word in a sentence, and then repeat the word. The student then writes the word on a piece of paper. There are 26 words that are supposed to be administered and they get harder as the list progresses. During any portion of the assessment if the student gets overwhelmed or misspells more than five words in a row the assessment is stopped. This assessment helps to let the teacher know what area of spelling the student is struggling with at their grade level and if this can eventually impede their ability to read.

The third assessment administered was the Qualitative Reading Inventory Word List (Leslie & Caldwell, 2017). The Qualitative Reading Inventory Word List is an assessment where a list of 20 words are given to the student in increasing difficulty, the student reads each of the words aloud to the teacher. The teacher has a separate sheet where they mark if the student identifies the word automatically. If a student misses a word or self-corrects that is also noted. This helps the teacher see what types of words the student struggles with and see if there are any patterns between them. It also helps the teacher to recognize if there are any patterns between the words on the word list missed and the words on the spelling list missed.

The final assessment administered was the Qualitative Reading Inventory Running Record (Leslie & Caldwell, 2017). The Qualitative Reading Inventory Running Record is an assessment that begins with three or four questions that help to activate the students background knowledge about what the passage will be about. It helps the teacher to identify what the student already knows and does not know about the topic. The student is then given a passage to read orally and the teacher marks any miscues or mistakes the student has while reading. The same

words from the Qualitative Reading Inventory Word List are scattered throughout the passage so that the teacher can determine if the student is able to identify any of the words they may have missed using the context clues of the passage. Next, the teacher asks the student to retell the story, this helps the teacher to see how much the student remembers from the story and if the student may have forgotten any important details. This also tells the teacher if the student is able to sequence events, which is crucial for students with dyslexia and ADHD because a lot of the time those students struggle with sequencing. Finally, the teacher asks the students some comprehension questions to help fill in the blanks of the retell. The comprehension questions include both explicit questions, questions that can be directly found in the text and implicit questions, questions that the student has to infer when answering.

All of these assessments help the teacher to identify the reading level of the student. These assessments will allow me to identify what area of fluency and comprehension the student may be struggling with and if there are any patterns between their assessments and what they are missing. After all of the assessments are conducted I will begin the interventions. The interventions should help to bring the student back to grade level if needed and also help to improve their fluency through practicing specific skills.

Interventions that will be Implemented

The first intervention that will be given to each student is the Fry Word List. The Fry word list is recommended by K12 Reader: Reading Instructional Resources (2018). It is a list of 100 high frequency words that the student should be seeing in everyday reading at their grade level. This list is supposed to help build the students' familiarity of the words and help commit them to memory so that when the student comes to those words while reading they can identify

them at a fast pace. The Fry Word List tells the teacher how many words a student can read in one minute, so it measures their words read per minute, out of context.

The next intervention that will be given to each student is the Fry Word Phrases. The Fry Word Phrases are similar to the Fry Word List but instead of it being a list of words it is a list of phrases. The Fry Word Phrases are also recommended by K12 Reader: Reading Instructional Resources (2018). It is a list of 100 high frequency word phrases that the student should be seeing in everyday reading at their grade level. This list is supposed to help build the students familiarity to the phrases and help commit them to memory so that the student can identify them at a fast pace when they see them while reading. With the Fry Word Phrases instead of timing the student to see how many words they can read in one minute, I decided just to have the students read them aloud so they could practice them and just familiarize themselves with common phrases they see in their everyday reading.

The third intervention that will be given to the students are repeated readings. Repeated readings are recommended by multiple sources. Ardoin, Binder, Foster, and Zawoyski (2016) wrote, repeated readings show significant improvement in students' reading fluency if used consistently. Repeated readings were implemented bi-weekly with the students on odd weeks (week one, week three, and week five). Another source, Ardoin, Eckert, and Cole (2019) wrote, repeated readings have a high success rate on helping to improve student' oral fluency. There is another article that Ardoin wrote with Rogers (2018) that explains how to use repeated readings with listening passages and how they can also be beneficial in improving a student's reading fluency. A repeated reading is where the teacher demonstrates reading a passage and then the student mimics or repeats the passage the same way the teacher had demonstrated. It helps the

student recognize how a fluent reader should read. It tells the teacher if the student is actually recognizing how they are supposed to read and their reading rate.

The final intervention that will be given is the Neurological Impress Method. The Neurological Impress Method is very similar to repeated reading in that it is supposed to help the student recognize how they are supposed to read and their reading rate. With the Neurological Impress Method, the teacher reads at a normal pace and the student has to try to read along and keep up with the teacher. This helps the student to recognize what a fluent rate should sound like and it also allows the student to practice. The Neurological Impress Method was also implemented bi-weekly with the students on even weeks (week two, week four, and week six). According to Gipe and Richards (2017) students may become very frustrated during the Neurological Impress Method because they are trying to keep up with the teacher's rate. Therefore, it is very important to give the students a lot of brain breaks to help keep them motivated. Young, Mohr, and Rasinski (2015) concluded that results of the interventions through Neurological Impress Method showed that students in the treatment demonstrated increased reading expression, reading rate, and overall reading scores.

After all of the interventions have been administered the data will be compiled and analyzed. I will look at any correlations between the two students and their improvements. Then I will decide who improved the most and if the interventions were actually beneficial for each of the students. All of this information will then be shared with the classroom teacher to provide them strategies to use with the students to help them to continue to improve on their reading skills in the classroom.

Monitoring Assessments and Post-Assessment that will be Administered

Throughout the intervention phase of research, I administered two monitoring assessments to each student. These monitoring assessments were administered on week two and week four of the interventions. The first monitoring assessment was a level two Qualitative Reading Inventory Running Record titled *Whales and Fish*. This passage was a non-fiction passage with 198 words, administered on week two of the interventions. The second monitoring assessment was the same as the pre-assessment level two Qualitative Reading Inventory Running Record titled *Father's New Game*. This was a fiction passage with 298 words administered on week four of the interventions. After the completion of all interventions, I administered two post-assessments to see how much Student A had grown. The first post-assessment was the level two Qualitative Reading Inventory Word List. The second post-assessment was a level two Qualitative Reading Inventory Running Record titled *The Family's First Trip*. This was a fiction passage with 305 words.

Research Findings

Student A: Student with Dyslexia

Student A is a fourth-grade student at the Roberts Academy at Florida Southern College. He has been diagnosed with dyslexia and is attending a school that specializes in teaching students with dyslexia. He loves anything that has to do with history and social studies. Student A loves to hear about the adventures people went on in the past. His favorite books to read are the Goosebumps series because they are thrilling, while being a little scary. Student A also wants to become a Navy Seal when he grows up because he wants to do the hard and challenging job that many people are scared to do. He likes the thrill and adventure. Student A said he does not mind reading but he knows he struggles with it, so if he had the choice he wouldn't read. He

comprehends everything he reads and is able to retell every story with even the smallest details, but when it comes to fluency Student A struggles.

Assessments

The first assessment administered to Student A was an Interest Inventory. I asked Student A general questions about himself and school, to learn more about him. From this Interest Inventory, I learned that Student A's favorite subject in school is social studies because he likes to inquire about the past and apply it to his life. He also likes hearing about all the cool things that have happened in the past and how they have affected us today. Based on this information it has made me aware that when I am choosing passages for intervention I should use passages that relate to history because that is one of his interests.

The second assessment I administered to Student A was the Words their Way Primary Spelling Inventory. This is a list of 26 words that helped me determine what spelling level Student A falls under. I had to stop the assessment at word number 20 because Student A got very frustrated. He spelled 12 out of the 20 words he wrote correctly, which is a little over half. He struggled with the long vowel team words that included, ai, ea, oa, and igh. He also struggled with other vowel team words that had ew, aw, and ou. This told me that Student A falls early within the word pattern stage in the common long vowels part.

The third assessment I administered to Student A was the Qualitative Reading Inventory Word List 1. I administered a level one or first grade list to Student A. He scored 16 out of the 20 words correct which is an 80% and falls in the instructional level of QRI. He automatically identified five words and then identified eleven words after a two second wait, or after self-correcting. He never got frustrated and stayed calm throughout the assessment. There was only

one word he decided to skip and that was because he did not know it and that was the word “enough.”

The fourth assessment I administered to Student A was the Qualitative Reading Inventory Word List 2. The second list was a level two or second grade QRI word list. I decided to give Student A the next level QRI word list to see if it was more his level since he did very well on the first word list. On the second word list, Student A read 13 out of the 20 words correctly which is a 65% and in the frustration level of QRI. He automatically identified four words and then identified after a two second wait or self-corrected nine words. He got very frustrated and aggravated during this assessment. This told me that he knew he was struggling.

Finally, I administered the Qualitative Reading Inventory Running Record to Student A. The Running Record I administered was a level two or second grade level passage titled *Father's New Game*. Student A did very well on the concept questions since they were about things in which he was familiar with. In all, Student A had 16 miscues, from those 16, eight of the miscues changed the meaning of the word and then four of those eight he corrected his own miscue. He did the same for the eight miscues that did not change the meaning, five of them he also corrected. With those miscues considered, it took Student A five minutes and six seconds to read the passage, this means that his words correct per minute was 55, which is not good at all. According to an article in Reading Rockets, Hasbrouck and Tindal (2017) this means Student A is in the 25th percentile for second grade and Student A is in the fourth grade at the Roberts Academy. For Retell, he scored 13 of the 19 points, this is really good for his level. Finally, for comprehension Student A got all eight questions correct which is in the independent stage of comprehension. From the results of this Running Record, it reiterated that Student A does really well with his semantic cuing skills. Of the words he struggled with there were only three of the

eight meaning change words that he did not self-correct. So out of the 298 words in the passage he was able to read 295 of them with the correct meaning. This made me realize that his issue is not really the decoding, it is his fluency. He still reads very slowly and only got 55 words per minute, which means Student A's rate is slow and we need to focus on working on improving his rate.

Interventions

Based on the assessments administered to Student A, I learned that he struggles with his fluency. Over the course of a six-week time span, I implemented a variety of interventions to help improve and work on his fluency. Those interventions included the Fry Word List, the Fry Word Phrases, Repeated Readings, and the Neurological Impress Method. I also reassessed Student A using a different level two Qualitative Reading Inventory Running Records to monitor his growth over that six-week time span. I assessed Student A using the QRI Running Records on week two, week four, and did a final assessment on week six.

The first intervention that was implemented for Student A was the Fry Word List. Each week Student A read as many of the words he could in one minute. Each week after he read as many words he could in one minute we went through and reread all 100 words to help build his familiarity of the words and phrases and help commit them to memory so that he can identify them at a fast pace. The first week Student A read 55 words in one minute and made an error on two words but self-corrected one, therefore he read 54 words in one minute. Week two, Student A read 63 words in one minute and made an error on seven words but self-corrected five of them, therefore he read 61 words in one minute. Week three, Student A read 76 words in one minute and made one error, therefore he read 75 words in one minute. Week four, Student A read 79 words in one minute and made two errors but self-corrected one of them, therefore he read 78

words in one minute. Week five, Student A fell back a little bit, reading 76 words in one minute and making two errors with no corrections, therefore he read 74 words in one minute. Finally, the last week Student A read 84 words in one minute and made one error, therefore he read 83 words in one minute (*see table one for breakdown of results*). Student A over the course of the six-week period improved from reading 54 words correct per minute to reading 83 words correct per minute. This is an amazing 29-word jump (*see figure one for graph of the results*).

The second intervention implemented with Student A was the Fry Word Phrases. Every other week Student A read aloud all of the phrases. We read the phrases on week one, week three and week five of intervention, since those were the weeks I did not administer an assessment. As he read, the phrases were organized into two piles, read correctly and read incorrectly. After Student A was finished reading all of the phrases we went back through and reread all of the phrases he made errors on. I read the phrase aloud first and then Student A read the phrase back to me. As the weeks progressed Student A's pile of phrases he made errors on got smaller and smaller. By the end of week five he only made errors on six of the 100 phrases, whereas on week one he made errors on 17 of the 100 phrases.

The third intervention implemented with Student A was the Repeated Readings. For the Repeated Reading passage, I chose a book that I knew Student A would be interested in so he would be more motivated to work. The book I chose was *Goosebumps, The Haunted Mask* written by R. L. Stine. *The Haunted Mask* is a 3.8 reading level, which means it is a third-grade level book. The reason I chose a book that was third grade instead of second, where Student A tested, is because he would be mimicking how I am reading so I wanted to challenge him a little. Throughout the three different Repeated Readings we did on week one, week three, and week five, Student A never got frustrated. He actually really enjoyed them because he was trying to

compete with me in order to read more fluently. We would read a chapter together each week, where I would read a paragraph and then Student A would read the next paragraph trying to copy the way I read, using lots of expression.

The final intervention implemented with Student A was the Neurological Impress Method. Just like the Repeated Readings, the Neurological Impress Method was implemented bi-weekly on week two, week four, and week six. We used the same book when doing the Neurological Impress Method to help keep Student A motivated and focused throughout the reading. Student A got very frustrated during this intervention. He has the tendency to want to read perfectly and if he couldn't keep the right rate in order to read with me fluently, he got frustrated. Whenever Student A started to get frustrated we would stop and take a short break. We would read a chapter together each week, where Student A would read along with me trying to keep the same reading rate.

Monitoring and Post-Assessment

Throughout the course of intervention, I also administered some monitoring assessments to Student A. These included two level two Qualitative Reading Inventory Running Records a nonfiction passage, *Whales and Fish*, and a fiction passage, *Father's New Game*. On the final week after all interventions were completed, I administered two post-assessments to see how much Student A had grown. The first post-assessment was the level two Qualitative Reading Inventory Word List. The second post-assessment was a level two Qualitative Reading Inventory Running Record titled *The Family's First Trip* (see table three for results of all four assessments).

On the first monitoring assessment, the level two Qualitative Reading Inventory Running Record, *Whales and Fish*, Student A got all of the concept questions correct at the beginning

since he had some background knowledge on *Whales and Fish*. In all, Student A only had one miscue, and it changed the meaning of the word but he self-corrected. With the one miscue considered, it took Student A three minutes and four seconds to read the passage, this means that his words correct per minute was 64, which is nine words correct per minute improvement from his pre-assessment passage. For Retell, he only scored six of the 18 points, he really struggled to retell the non-fiction text. Finally, for comprehension Student A scored seven out of the eight questions correct which is in the instructional stage of comprehension. For the one question he missed when prompted he was able to answer it correctly.

For the second monitoring assessment, the level two Qualitative Reading Inventory Running Record, *Father's New Game*, Student A got all of the concept questions correct at the beginning since he had some background knowledge from the previous read. In all, he had five miscues, from those five, three of the miscues changed the meaning of the word and then he self-corrected two of them. For the two words that did not change the meaning, he self-corrected both of them. With those miscues considered, it took Student A four minutes and 27 seconds to read the passage, this means that his words correct per minute was 66, which is an 11 word correct per minute improvement from his pre-assessment passage and a two word correct per minute improvement from his first monitoring assessment. For Retell he scored 17 of the 19 points, which is amazing and a huge improvement. Finally, for comprehension Student A got all eight questions correct which is in the independent stage of comprehension.

On the first post-assessment administered, the level two Qualitative Reading Inventory Word List, Student A make huge growth. Student A read 13 out of the 20 words correctly which is an 80% and in the instructional level of QRI. He automatically identified 11 words and then identified after a two second wait or self-corrected, five words. He never got frustrated during

this assessment which is a huge improvement from the first time it was administered because he got very aggravated during the first assessment. Overall, Student A improved by two words but he identified seven more automatically.

On the second post-assessment administered, the level two Qualitative Reading Inventory Word List, *The Family's First Trip*, Student A got all of the concept questions correct since he had some background knowledge on traveling. In all, he had four miscues, from those four, all of the miscues changed the meaning of the word and then he self-corrected one of them. With those miscues considered, it took Student A five minutes and 48 seconds to read the passage, this means that his words correct per minute was 67, which is a 12 word correct per minute improvement from his pre-assessment passage, three words correct per minute improvement from his first monitoring assessment, and a one word correct per minute improvement from his second monitoring assessment (*see figure three for results of all four assessments*). For Retell, he only scored 13 of the 23 points, which is pretty good for how many retell points there were. Finally, for comprehension Student A got all eight questions correct which is in the independent stage of comprehension.

Student B: Student with Dyslexia and ADHD

Student B is a fourth-grade student at the Roberts Academy at Florida Southern College. He has been diagnosed with both dyslexia and ADHD. He is currently being medicated for his ADHD but it is at the lowest dosage possible. This is due to his parents believing he can manage his ADHD using other tools. These other tools include getting regular exercise and using fidget materials in class i.e. fidget spinner and fidget putty. He loves anything that involves solving a problem. Student B is very curious and is always asking questions which is why he loves math so much. He says there are so many layers and it's like solving a bunch of puzzles. His favorite

book is *The Cat in the Hat* written by Dr. Seuss because it is really silly and follows a rhythm. Student B also wants to be a commercial fisherman when he grows up. He loves adventure and spending time outdoors. Student B said he is always excited to come to school but he is not always excited about reading because he knows he not the best and he doesn't like the other kids to see him struggle. So, if he had the choice he said he would not read. Student B, like Student A comprehends everything he reads and is able to retell every story with even the smallest details but when it comes to fluency Student B struggles a little more.

Assessments

The first assessment administered to Student B was an Interest Inventory. I asked Student B general questions about himself and school to learn more about him. From this Interest Inventory I learned that Student B's favorite subject in school is Math because he likes to solve the puzzles the problems ask, and he said it just comes easier to him. He also likes learning about the environment and how different things work in the outdoors. Based on this information it has made me aware that when I am choosing passages for intervention I should use passages that relate to being outside because that is one of his interests.

The second assessment I administered to Student B was the Words their Way Primary Spelling Inventory. I completed the whole list with Student B but towards the end he got very frustrated. He spelled 14 out of the 26 words correctly, which is a little more than half. He struggled with the long vowel team words that included ai, ea, oa, and igh. He also struggled with other vowel team words that included aw, ou, and oi. This told me that Student B falls early within the word pattern stage in the common long vowels part. This is the same stage that Student A fell under.

The third assessment I administered to Student B was the Qualitative Reading Inventory Word List 1. The results of the assessment I gave to Student B for a level two or second grade list are, Student B read 17 out of the 20 words correctly which is an 85% and in the instructional level of QRI. He automatically identified 10 words and then identified after a two second wait or self-corrected, seven words. There were three words that he was unable to identify: else, suit, and push. He never got frustrated and stayed calm throughout the assessment.

The fourth assessment I administered to Student B was the Qualitative Reading Inventory Word List 2. The second list was a level three or third grade QRI Word list. On the second word list, Student B read 16 out of the 20 words correctly which is an 80% and in the instructional level of QRI. He automatically identified six words and then identified after a two second wait or self-corrected 10 words. There were three words that Student B was unable to identify: engines, tongue, and glowed. There was one word that Student B skipped completely because he had no idea what the word was: curious. He got very frustrated and aggravated during this assessment. This told me Student B recognized he was struggling.

Finally, I administered the Qualitative Reading Inventory Running Record 1 to Student B. The Running Record I administered was a level two or second grade level passage, titled *Father's New Game*. Student B did very well on the concept questions since they were about things in which he was familiar. In all, he had 11 miscues, from those 11, six of the miscues changed the meaning of the word and then he did not self-correct any of them. For the four words that did not change the meaning, he corrected one them. With those miscues considered, it took Student B five minutes and 54 seconds to read the passage, this means that his words correct per minute was 80, which is not good at all. According to an article in Reading Rockets, Hasbrouck and Tindal (2017) this means Student B is in the 25th percentile for third grade and

Student B is in the fourth grade at the Roberts Academy. For Retell he scored 11 out of the 19 points, this is pretty good for his level since he only missed eight points and most were minor. He did miss the goal of the story which is considered a main point. The goal was that the children wanted something to do and Student B did not mention this at all. Finally, for comprehension Student B got seven of the eight questions correct which is in the instructional stage of comprehension. The question Student B missed was explicitly stated in the passage: What did Mary and Susan want? The correct answer was to go to a movie and Student B said to play a game. From the results of this Running Record, I learned that Student B does really well with his semantic cuing skills, this means that he uses the words in the passage to help him figure out the meaning and also what the word is that he is struggling with. So out of the 298 words in the passage he was able to read 291 of them with the correct meaning. This made me realize that his issue isn't really decoding, it is his reading fluency. He still read pretty slow for an average fourth grade student and only got 20 words per minute. Also, with the number of miscues made by Student B that he did not self-correct made me think he isn't realizing when he makes a mistake. I need to work on Student B's fluency with him and also work on helping him realize when he makes a mistake and to fix those mistakes.

Interventions

Based on the assessments administered to Student B, I learned that he struggles with his fluency. Over the course of a six-week time span, I implemented a variety of interventions to help improve and work on his fluency. Those interventions included the Fry Word List, the Fry Word Phrases, Repeated Readings, and the Neurological Impress Method. I also reassessed Student B using different level two Qualitative Reading Inventory Running Records to monitor

his growth over that six-week time span. I assessed him using the QRI Running Records on week two, week four, and did a final assessment on week six.

The first intervention that was implemented with Student B was the Fry Word List. Each week Student B read as many of the words he could in one minute. Each week after he read as many words as he could in one minute we went through and reread all 100 words to help build his familiarity of the words and phrases and help commit them to memory so that he can identify them at a fast pace. The first week Student B read 60 words in one minute and made an error on two words but self-corrected one, therefore he read 59 words in one minute. Week two, Student B read 63 words in one minute and made an error on three words but self-corrected one of them, therefore he read 61 words in one minute. Week three, Student B read 76 words in one minute and made one error, therefore he read 75 words in one minute. Week four, Student B read 78 words in one minute and made one error but self-corrected, therefore he read 78 words in one minute. Week five, Student B read 86 words in one minute and made one error but self-corrected, therefore he read 86 words in one minute. Finally, the last week Student B read 88 words in one minute and made one error but self-corrected, therefore he read 88 words in one minute (*see table two for breakdown of results*). Student B over the course of the six-week period improved from reading 59 words correct per minute to reading 88 words correct per minute. This is an amazing 29-word jump (*see figure two for graph of the results*).

The second intervention implemented with Student B was the Fry Word Phrases. Every other week Student B read aloud all of the phrases. We read the phrases on week one, week three, and week five of intervention, since those were the weeks I did not administer an assessment. As he read, the phrases were organized into two piles, read correctly and read with errors. After Student B was finished reading all of the phrases we went back through and reread

all of the phrases he made errors on. I read the phrase aloud first and then Student B read the phrase back to me. As the weeks progressed Student B's pile of phrases he made errors on got smaller and smaller. By the end of week five he only made errors on four of the 100 phrases, whereas on week one he made errors on 12 of the 100 phrases.

The third intervention implemented with Student B was the Repeated Readings. For the Repeated Reading passage, I chose a book that I knew Student B would be interested in so he would be more motivated to work. The book I chose was *If I Ran the Zoo*, this is another Dr. Seuss book since he said his favorite book was *The Cat and The Hat*. *If I Ran the Zoo* is a 3.8 reading level, which means it is a third-grade level book. The reason I chose a book that was third grade instead of second, where Student B tested, is because he would be mimicking how I am reading so I wanted to challenge him a little. Throughout the three different Repeated Readings we did on week one, week three, and week five, Student B never got frustrated. He actually really enjoyed them because he was trying to compete with me in order to read more fluently. We would read four to five pages together each week, where I would read a paragraph and then Student B would read the next paragraph trying to copy the way I read, using lots of expression.

The final intervention implemented with Student B was the Neurological Impress Method. Just like the Repeated Readings, the Neurological Impress Method was implemented bi-weekly on week two, week four, and week six. We used the same book when doing the Neurological Impress Method to help keep Student B motivated and focused throughout reading. Student B got a little frustrated during this intervention. He has the tendency to want to compete and make it into a competition so if he couldn't keep the right rate in order to read with me fluently he got frustrated. Whenever Student B started to get frustrated I let him take a little

break while I just read him a page. We would read four to five pages together each week, where Student B would read along with me trying to keep at the same rate.

Monitoring and Post-Assessment

Throughout the course of intervention, I also administered some monitoring assessments to Student B. These included two level two Qualitative Reading Inventory Running Records a nonfiction passage, *Whales and Fish*, and a fiction passage, *Father's New Game*. On the final week of intervention after all interventions were completed, I administered two post-assessments to see how much Student B had grown. The first post-assessment was the level two Qualitative Reading Inventory Word List. The second post-assessment was a level two Qualitative Reading Inventory Running Record titled *The Family's First Trip* (see table four for results of all four assessments).

On the first monitoring assessment, the level two Qualitative Reading Inventory Running Record, *Whales and Fish*, Student B got two of the three concept questions correct at the beginning since he didn't really have much background knowledge on *Whales and Fish*. In all, Student B only had three miscues, from those 3, all of them changed the meaning of the word and then he self-corrected two of them. With those miscues considered, it took Student B two minutes and 21 seconds to read the passage, this means that his words correct per minute was 83, which is a three word correct per minute improvement from his pre-assessment passage. For Retell, he scored got eight of the 18 points, he really struggled to retell the non-fiction text. Student B retold the second part of the story first and then needed prompting to remember the first half. Finally, for comprehension Student B answered five out of the eight questions correct which is in the frustration stage of comprehension. Student B was having a very off day. He was

super distracted and came in very tired and not excited about the day, which his attitude was reflected through his level of work.

For the second monitoring assessment, the level two Qualitative Reading Inventory Running Record, *Father's New Game*, Student B got all of the concept questions correct at the beginning since he had some background knowledge from the previous read. In all, he had five miscues, from those 5, four of the miscues changed the meaning of the word and then he self-corrected two of them. For the one word that did not change the meaning, he self-corrected it. With those miscues considered, it took Student B four minutes and six seconds to read the passage, this means that his words correct per minute was 90, which is a 10 word correct per minute improvement from his pre-assessment passage and a seven word correct per minute improvement from his first monitoring assessment. For Retell he only scored 12 of the 19 points, which is amazing and a huge improvement. Finally, for comprehension Student B got seven out of the eight questions correct which is in the instructional stage of comprehension. When prompted he got all eight questions correct.

On the first post-assessment administered, the level two Qualitative Reading Inventory Word List, Student B make huge growth. Student B read 18 out of the 20 words correctly which is a 90% and in the independent level of QRI. He automatically identified 14 words and then identified after a two second wait or self-corrected, four words. He never got frustrated during this assessment which is a huge improvement from the first time it was administered because he got very aggravated during the first assessment. Overall, Student B improved by one word but he identified four words more automatically.

On the second post-assessment administered, the level two Qualitative Reading Inventory Word List, *The Family's First Trip*, Student B got all of the concept questions correct since he

had some background knowledge on traveling. In all, he had seven miscues, from those seven, six of the miscues changed the meaning of the word and then he self-corrected four of them. For the one word that did not change the meaning, he self-corrected it. With those miscues considered, it took Student B, three minutes and 46 seconds to read the passage, this means that his words correct per minute was 79, which is a one word correct per minute decrease from his pre-assessment passage, a four word correct per minute decrease from his first monitoring assessment, and an 11 word correct per minute decrease from his second monitoring assessment (*see figure four for results of all four assessments*). For Retell he only scored 10 of the 23 points, which is pretty good for how many retell points there were. Finally, for comprehension Student B got all eight questions correct which is in the independent stage of comprehension. Student B was having another off day during this assessment which is why his results were so low. He came in very distracted and did not want to participate in anything during interventions.

Research Analyzed

After all interventions and assessments were completed, data from both Student A and Student B was brought together and compared. Over the course of the six-week intervention and assessment period both Student A and Student B improved in their fluency and reading comprehension skills. Looking at *figure three and figure four* it is very obvious that Student A improved at a steadier rate than Student B. Student B went up and down with his fluency but was still improving. Both Student A and Student B improved the same amount on their Fry Word Lists, 29 words, but Student B made less errors than Student A (*figures one and two*). Overall, with comprehension Student A received higher, more consistent, scores on his comprehension assessments than Student B. Looking at the interventions and assessments from both students, it can be concluded that even though Student B is able to read more words correct per minute,

Student A is a more fluent reader because he consistently improves over time and is able to comprehend what he reads. I believe if Student B did not have the impeding factor of ADHD he would also be able to comprehend more of the text he reads, in turn creating a more fluent reader. Because Student B gets very distracted while reading it causes him to mess up and not be able to comprehend the text as well. Therefore, ADHD is an impeding factor in Student B's reading comprehension and fluency.

Plan for the Future

Moving forward both Student A and Student B will continue to be monitored by their classroom teachers. The research and results from this study has been communicated with both Student A and Student B classroom teachers and guardians. At home Student A and Student B will continue to work on the Fry Word List. For this to be most effective Student A and Student B have moved to the next level of 100 Fry Words. This will help both of them to continue to grow their familiarity with words they should be seeing in their everyday reading so they can identify them at a fast rate, in turn enabling them to be a more fluent reader. It is also recommended that Student A and Student B continue to be pulled by their classroom teacher for 45 minutes total a week to continue to work on their fluency. With the classroom teacher they will be working on Repeated Readings or the Neurological Impress Method. Also, within the classroom Student A and Student B will continue to be monitored by different fluency assessments to continue to track their growth. The fluency assessments will include more Qualitative Reading Inventory Running Records and also Read Naturally, an online reading fluency tracker used at the Roberts Academy.

Conclusion

Based on the results of the post-assessments my original hypothesis proved that interventions will be able to help both the student with dyslexia (Student A) and the student with dyslexia and ADHD (Student B) but the student with just dyslexia (Student A) will be able to improve at a faster rate and also improve more than the student with dyslexia and ADHD (Student B). Because of the student with dyslexia (Student A) improving at a faster rate I also hypothesized that this will allow the student to be able to better comprehend the text since they are reading the text more fluently. My hypothesis still stands true, Student A improved at a steadier rate than Student B. Even though Student B was able to read more words correct per minute, Student A improved overall by more words correct per minute than Student B. Student A improved by 12 words correct per minute, whereas Student B only improved by 10 words correct per minute and then on his final assessment he dropped down and actually decreased by one word correct per minute. I also conclude that Student A had a better ability to comprehend the text than Student B. Since, Student A was able to read more fluently he answered more comprehension questions correctly on all of the assessments than Student B. Overall, my hypothesis is still valid. In the future if this research were to be conducted again I would like to also have a control group where there is a student that does not have any learning disabilities. I also would like to assess the students over a longer period of time, a whole academic school year, to be able to see true growth.

References

- Ardoin, S. P., Binder, K. S., Foster, T. E., & Zawoyski, A. M. (2016). Repeated versus wide reading: A randomized control design study examining the impact of fluency interventions on underlying reading behavior. *Journal of School Psychology, 59*(1), 13–38.
<http://ezproxy.flsouthern.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,uid&db=eoah&AN=40013832&scope=site>
- Ardoin, S., Eckert, T., & Cole, C. (2019). Promoting generalization of reading: a comparison of two fluency-based interventions for improving general education student's oral reading rate. *Journal of Behavioral Education, (Preprints)*, 1–16.
<http://ezproxy.flsouthern.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,uid&db=eoah&AN=14182272&scope=site>
- Bear, D. R., Invernizzi, M., Templeton, S., & Johnston, F. (2016). Word study for beginners in the letter name-alphabetic stage. In M. D. Fossil (Ed.), *Words their way: word study for phonics, vocabulary, and spelling intervention* (6th ed., pp. 149-150). Upper Saddle River, NJ: Pearson.
- Gipe, J. P., & Richards, J. C. (2017). Word recognition. In J. Ross (Ed.), *Multiple paths to literacy: assessment and differentiated instruction for diverse learners, k-12* (9th ed., pp. 221-223). Boston, MA: Pearson.
- Hasbrouck, J., & Tindal, G. (2017). *Fluency norms chart (2017 update)*. Reading Rockets.
<https://www.readingrockets.org/article/fluency-norms-chart-2017-update>
- K12 Reader: Reading Instruction Resources. (2018). *Fry word list- 1,000 high frequency words*. K12 Reader. <https://www.k12reader.com/subject/vocabulary/fry-words/>

- K12 Reader: Reading Instruction Resources. (2018). *Fry word phrases- 1,000 high frequency word phrases*. K12 Reader. <https://www.k12reader.com/subject/vocabulary/fry-word-phrases/>
- Leslie, L., & Caldwell, J. S. (2017). A research perspective. In J. Johnson (Ed.), *Qualitative reading inventory- 6* (6th ed., pp. 15-17). New York, NY: Pearson.
- Mayo Clinic. "Attention-deficit/hyperactivity disorder (ADHD) in children." *Symptoms and causes*, Mayo Foundation for Medical Education and Research (MFMER), 2017. <https://www.mayoclinic.org/diseases-conditions/adhd/symptoms-causes/syc-20350889>
- Mayo Clinic. "Dyslexia." *Symptoms and causes*, Mayo Foundation for Medical Education and Research (MFMER), 2017. <https://www.mayoclinic.org/diseases-conditions/Dyslexia/symptoms-causes/syc-20353552>
- Rogers, L. S., & Ardoin, S. P. (2018). Investigating the benefit of adding listening passage preview to repeated readings. *School Psychology Quarterly*, 33(3), 439–447. <http://ezproxy.flsouthern.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,uid&db=eric&AN=EJ1191898&scope=site>
- Seuss. (1950). *If I Ran the Zoo*. Random House
- Stine, R. L. (1993). *Goosebumps: The Haunted Mask*. Scholastic
- Young, C., Mohr, K. A. J., & Rasinski, T. (2015). Reading together: a successful reading fluency intervention. *Literacy Research and Instruction*, 54(1), 67–81. <http://ezproxy.flsouthern.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,uid&db=eric&A>

Tables

Table 1

Student A Fry Word List Weekly Results

Week	Read	Suppose to be	Self-Correct?
1 55 words (54)	boy	by	
	our -> or	out	yes
2 63 words (61)	one	on	
	for	from	yes
	be -> but	by	yes
	you	your	yes
	dull	do	yes
	put	up	yes
	this	these	
3 76 words (75)	not	new	
4 79 words (78)	of	for	yes
	know	now	
5 76 words (74)	one	on	
	know	now	
6 84 words (83)	us	use	

Note: This table shows Student A's improvement in his Fry Word Lists. This is a list of 100 high frequency words that Student A should be seeing in everyday reading at his grade level. This list is supposed to help build his familiarity to the words and phrases and help commit them to memory so that he can identify them at a fast pace. With the word list he improved from reading 54 words correct per minute to reading 83 words correct per minute. This is an amazing 29-word jump.

Table 2

Student B Fry Word List Weekly Results

Week	Read	Suppose to be	Self-Correct?
1	boy	by	
60 words (59)	you	your	yes
2	you	your	yes
63 words (61)	does	do	
	this	these	
3	here	her	
76 words (75)			
4	know	now	yes
78 words (78)			
5	here	her	yes
86 words (86)			
6	been	be	yes
88 words (88)			

Note: This table shows Student B's improvement in his Fry Word Lists. This is a list of 100 high frequency words that Student B should be seeing in everyday reading at his grade level. This list is supposed to help build his familiarity to the words and phrases and help commit them to memory so that he can identify them at a fast pace. With the word list he improved from reading 59 words correct per minute to reading 88 words correct per minute. This is an amazing 29-word jump.

Table 3

Student A Pre-Assessment, Monitoring Assessments, and Post-Assessment Results

Date	Passage	WPM	WCPM	Number of Miscues	Level
Pre-Assessment Week 0	Father's New Game	58	55	16	Instructional
Week 2	Whales and Fish	65	64	1	Independent
Week 4	Father's New Game	67	66	5	Independent
Post-Assessment Week 6	The Family's First Trip	68	67	4	Independent

Note: This table shows Student A's improvement in his different level Qualitative Reading Inventory Running Records. In the first column it tells you when the assessment was administered. The second column is the passage tested. The third column is how many words the student read per minute and then the fourth is how many words the student read correct per minute. The fifth column is how many miscues the student had total throughout the passage. Finally, the last column is what level the student falls under for QRI. Student A made growth throughout all of his assessments. He went from reading 55 words correct per minute to 67 words correct per minute, a 12-word improvement.

Table 4

Student B Pre-Assessment, Monitoring Assessments, and Post-Assessment Results

Date	Passage	WPM	WCPM	Number of Miscues	Level
Pre-Assessment Week 0	Father's New Game	83	80	11	Instructional
Week 2	Whales and Fish	84	83	3	Independent
Week 4	Father's New Game	91	90	5	Independent
Post-Assessment Week 6	The Family's First Trip	81	79	7	Instructional

Note: This table shows Student B's progress in his different level Qualitative Reading Inventory Running Records. In the first column it tells you when the assessment was administered. The second column is the passage tested. The third column is how many words the student read per minute and then the fourth is how many words the student read correct per minute. The fifth column is how many miscues the student had total throughout the passage. Finally, the last column is what level the student falls under for QRI. Student B made growth throughout all of his assessments until his post-assessment. He went from reading 80 words correct per minute to 79 words correct per minute, a one-word decline.

Figures

Figure 1

Student A Fry Word List Results

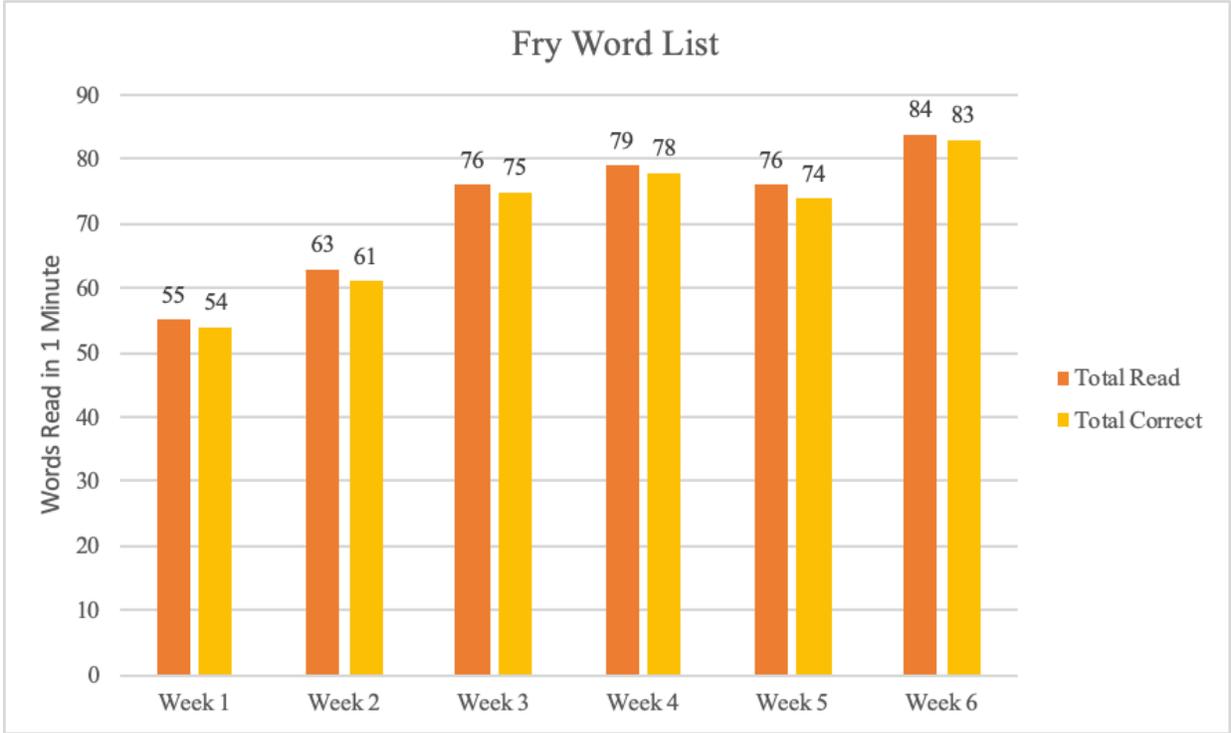


Figure 1: This graph shows Student A’s improvement in his Fry Word Lists. This is a list of 100 high frequency words that Student A should be seeing in everyday reading at his grade level. The dark orange shows how many total words Student A read each week. The light orange shows how many words Students A read correctly each week. With the word list he improved from reading 54 words correct per minute to reading 83 words correct per minute.

Figure 2

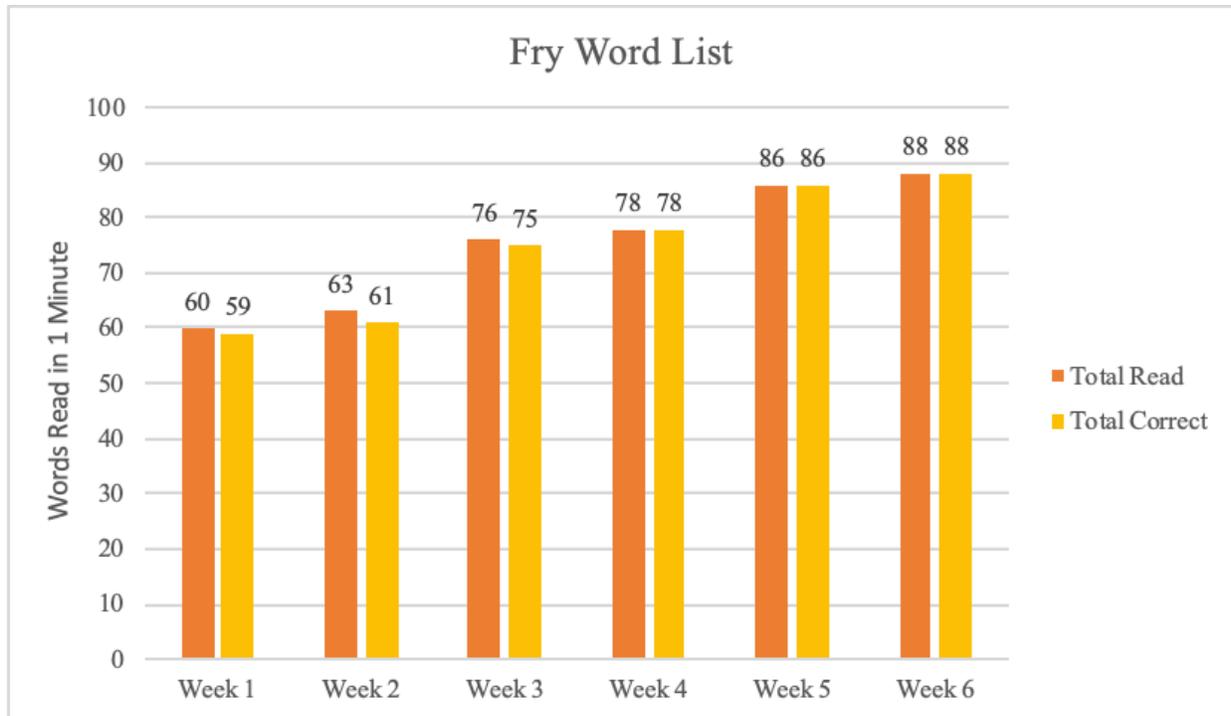
Student B Fry Word List Results

Figure 2: This graph shows Student B's improvement in his Fry Word Lists. This is a list of 100 high frequency words that Student B should be seeing in everyday reading at his grade level. The dark orange shows how many total words Student B read each week. The light orange shows how many words Students B read correctly each week. With the word list he improved from reading 59 words correct per minute to reading 88 words correct per minute.

Figure 3

Student A Pre-Assessment, Monitoring Assessments, and Post-Assessment Words per Minute and Words Correct per Minute Results

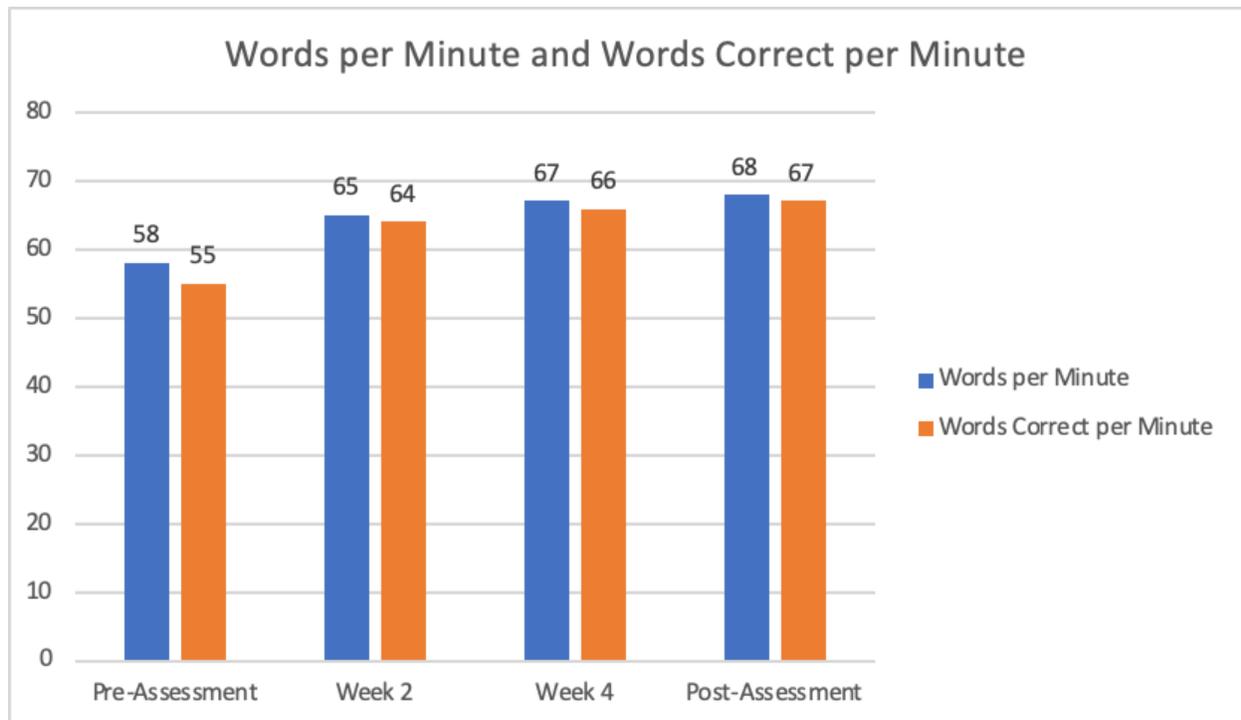


Figure 3: This graph shows Student A's improvement in his number of words read per minute and his number of words read correct per minute. The blue shows how many total words Student A read for each assessment in one minute. The orange shows how many total words Student A read correctly for each assessment in one minute. Student A made growth throughout all of his assessments. He went from reading 55 words correct per minute to 67 words correct per minute, a 12-word improvement.

Figure 4

Student B Pre-Assessment, Monitoring Assessments, and Post-Assessment Words per Minute and Words Correct per Minute Results

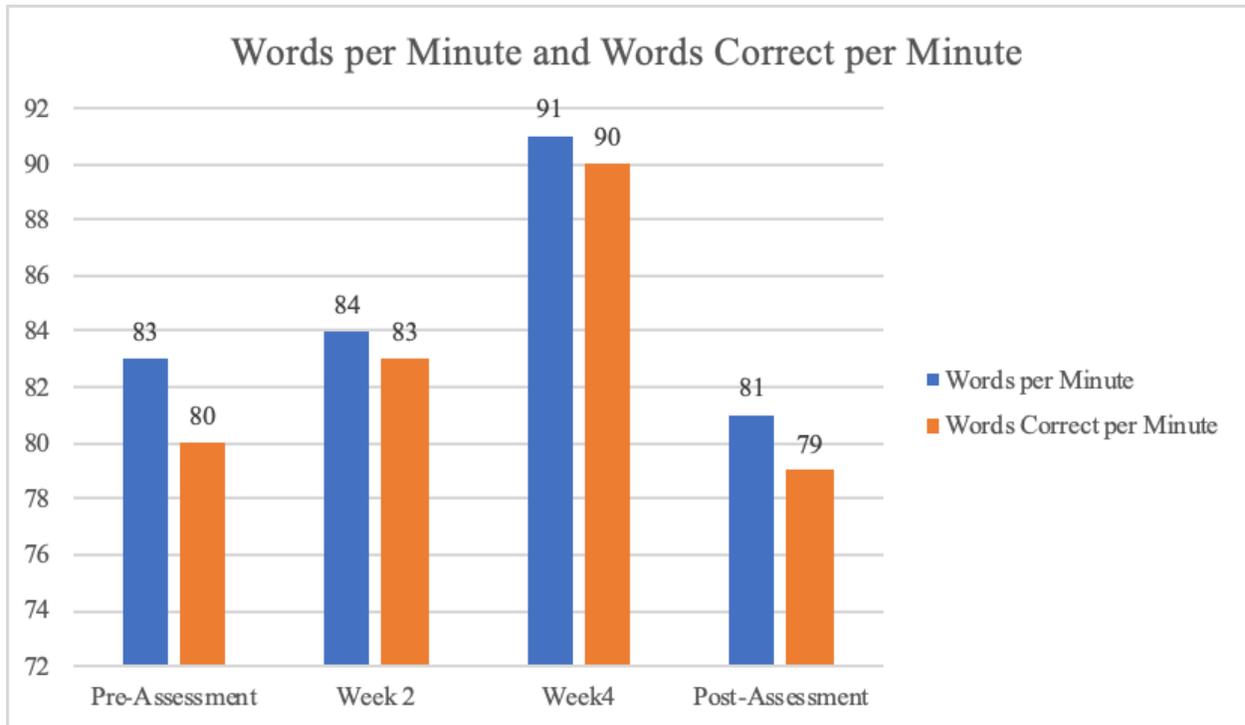


Figure 4: This graph shows Student B's progress in his number of words read per minute and his number of words read correct per minute. The blue shows how many total words Student B read for each assessment in one minute. The orange shows how many total words Student B read correctly for each assessment in one minute. Student B made growth throughout all of his assessments until his post-assessment. He went from reading 80 words correct per minute to 79 words correct per minute, a one-word decline.