

Master of Education Program Theses

8-31-2017

The Effects of Reading Fluency Interventions on Different Populations of Students Repeated Readings vs. Lexia Core 5

Matt Den Hartog

Follow this and additional works at: https://digitalcollections.dordt.edu/med_theses



Part of the [Curriculum and Instruction Commons](#)

Recommended Citation

Den Hartog, Matt, "The Effects of Reading Fluency Interventions on Different Populations of Students Repeated Readings vs. Lexia Core 5" (2017). *Master of Education Program Theses*. 116.
https://digitalcollections.dordt.edu/med_theses/116

This Thesis is brought to you for free and open access by Dordt Digital Collections. It has been accepted for inclusion in Master of Education Program Theses by an authorized administrator of Dordt Digital Collections. For more information, please contact ingrid.mulder@dordt.edu.

The Effects of Reading Fluency Interventions on Different Populations of Students Repeated Readings vs. Lexia Core 5

Abstract

Much research has been conducted on the importance of reading fluency. Researchers nearly all conclude that reading fluency greatly affects a student's overall ability to read. However, often times reading fluency is not given the same importance in intermediate and upper elementary grades. This study was conducted to determine whether Lexia Core 5 or repeated reading interventions had a greater effect on reading fluency gains for third through fifth grade students in one rural, public school. Forty-two students participated in the twelve week study. Various different subgroups of students were looked at and monitored. The final results, as a whole, were nearly identical. However, the Lexia intervention showed greater results for ESL students and students receiving Free and Reduced Lunch.

Document Type

Thesis

Degree Name

Master of Education (MEd)

Department

Graduate Education

First Advisor

Steve Holtrop

Keywords

Master of Education, thesis, reading, ability, literacy programs, Lexia Core 5

Subject Categories

Curriculum and Instruction | Education

Comments

Action Research Report Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Education

The Effects of Reading Fluency Interventions on Different Populations of Students

Repeated Readings vs. Lexia Core 5

By

Matt Den Hartog

Elementary Education
B.A. Briar Cliff College, 1999

Action Research Report
Submitted in Partial Fulfillment
Of the Requirements for the
Degree of Master of Education

Department of Education
Dordt College
Sioux Center, Iowa
August, 2017

The Effects of Reading Fluency Interventions on Different Populations of Students

Repeated Readings vs. Lexia Core 5

By

Matt Den Hartog

Approved:

Dr. Steve Holtrop
Faculty Advisor

08/31/2017
Date

Approved:

Dr. Steve Holtrop
Director of Graduate Education

08/31/2017
Date

Table of Contents

Title Page.....	i
Approval.....	ii
Table of Contents.....	iii
List of Figures.....	iv
Abstract.....	v
Introduction.....	1
Statement of Problem.....	2
Research Questions.....	2
Definition of Terms.....	3
Literature Review.....	5
Methods.....	13
Participants.....	13
Materials.....	13
Procedures.....	14
Results.....	16
Conclusion.....	22
Limitations.....	24
References.....	26

List of Figures

Graph	Page
1. Fluency scores for all students given interventions.....	16
2. Fluency scores for all students using repeated reading intervention.....	17
3. Fluency scores for all students given Lexia reading intervention.....	18
4. Fluency scores for ESL students.....	19
5. Fluency scores for FRL students.....	20
6. Repeated reading fluency scores by gender.....	21
7. Lexia fluency scores by gender.....	22

Abstract

Much research has been conducted on the importance of reading fluency. Researchers nearly all conclude that reading fluency greatly affects a student's overall ability to read. However, often times reading fluency is not given the same importance in intermediate and upper elementary grades. This study was conducted to determine whether Lexia Core 5 or repeated reading interventions had a greater effect on reading fluency gains for third through fifth grade students in one rural, public school. Forty-two students participated in the twelve week study. Various different subgroups of students were looked at and monitored. The final results, as a whole, were nearly identical. However, the Lexia intervention showed greater results for ESL students and students receiving Free and Reduced Lunch.

Introduction

With a constantly changing educational landscape where nothing seems to stay the same, nearly all teachers and researchers can agree that reading fluency is a critical component to overall reading success. Reading test scores seem to become more important each year. Teachers are constantly hearing about the need to raise low test scores and how we are falling further behind.

As lower elementary students learn to decode words the focus moves to reading fluency. Every elementary teacher can relate to those students in their classroom that cannot seem to increase their fluency numbers. What makes it even more difficult for these struggling readers is that they need to make above average gains to close the gap on their more advanced classmates. It can be difficult for teachers to find that one reading intervention or solution for their below grade level readers.

Most researchers agree that students who are not fluent readers usually struggle with comprehension. As students move through lower elementary and into upper elementary and middle school, the reading focus begins to change. Teaching students to read gradually turns into teaching students to read to learn. As students get into third, fourth, and fifth grade classrooms in most schools, there is no longer as much time dedicated to learning to read fluently. The question is, what happens to those students that never became fluent readers?

It is critical students continue to receive fluency instruction even in upper elementary classrooms if they still have that need. This need can be met in general education, with interventions, Title 1 Reading, or any other number of places. Fluency seems to be something that is often forgotten in upper elementary classrooms. This cannot happen when fluency is so

closely tied to reading comprehension, and reading comprehension is tied to nearly every other subject area in some way, shape, or form.

Statement of the Problem

Finding the most productive ways to help students become proficient readers has long been a goal of educators. There has been even more of a push in recent years with high stakes testing and state and federal mandates. Fluency has long been seen as a key to overall reading proficiency. One of the main concerns and questions educators have is how to get students struggling with fluency to become proficient readers. Many studies have been conducted that show repeated readings to be an effective method to increasing fluency. This study was conducted to compare the results of Lexia Core 5 and repeated readings. In particular, this study is looking at ESL students, Free and Reduced Lunch students, and the gender of students and the effects these interventions have on these particular students. It is also more indirectly looking to see if CAI interventions or teacher led intervention help upper elementary students attain reading fluency gains.

Research Questions

This action research project will attempt to answer the following questions:

1. Does the teacher-led repeated readings intervention or the blended computer based Lexia Core 5 better increase reading fluency in upper elementary students?
2. Which intervention works best for ESL students?
3. Which intervention work best for Free and Reduced Lunch Students?
4. Which intervention works best for students based on gender?

Definition of Terms

Automaticity is the ability to recognize words in a fast, effortless, automatic way when reading text.

Benchmark refers to a level that determines if students are meeting basic, grade level academic standards.

Blended approach refers to using both teacher instruction as well as computer based instruction.

CAI refers to school instruction and monitoring received on a computer. It stands for computer assisted instruction.

Cold Read is when a student is reading a passage for the first time with no prior practice.

DIBELS stands for Dynamic Indicators of Basic Early Literacy Skills. It is designed to check all students' reading progress.

DRA refers to the Developmental Reading Assessment. It is a reading test that is administered to find a student's reading level, accuracy, fluency, and comprehension levels.

FAST is an online reading assessment tool designed for universal screening and progress monitoring students. FAST stands for Formative Assessment System for Teachers.

ESL stands for English as a Second Language. It is a federal program designed to help students that are not native English speakers.

FRL stands for Free and Reduced Lunch. FRL is a federal lunch program that provides lunch and/or breakfast free or at a reduced cost to students.

Hot Read is a student reading the same passage multiple times hoping to improve each time.

Lexia is an online user-centered, interactive reading intervention for struggling readers in kindergarten through fifth grade.

MTSS is a decision making framework designed to help meet the needs of all students. The acronym stands for Multi-Tiered Systems of Support.

NRP or National Reading Panel was a panel created to assess the effectiveness of different approaches to teaching reading.

PRESS is a set of numerous reading interventions. It is an acronym that stands for Path to Reading Excellence in School Sites.

Prosody refers to the timing, intonation, and expressiveness used when a student reads.

Reading Fluency is the ability to read text accurately, quickly, and with proper expression.

Reading Intervention is a supplementary reading program designed to help struggling readers increase reading skills.

Repeated Reading refers to a reading intervention in which the student reads the same passage numerous times trying to improve rate of speed and accuracy.

WCPM is the number of word read correctly per minute in a given reading passage.

WPM refers to words per minute read.

Literature Review

Reading is inarguably one of the most important and critical educational skills, in part because it influences virtually all academic disciplines (Roundy & Roundy, 2009). Within the realm of reading, fluency and comprehension are two of the main components. Most experts agree that reading fluency directly impacts reading comprehension. Readers that lack fluency will often struggle with comprehension and many other facets of reading. There are many components to being a fluid reader. There are a variety of specific techniques that can be explicitly taught to help develop fluency. Often fluency is stressed in grades kindergarten through second grade, but is generally addressed minimally in intermediate and upper elementary classrooms.

At least one in five students has significant difficulties with reading acquisition (Lyon & Moats, 1997). Many of these students struggle with reading fluency throughout school and into adulthood. Students that have to focus all their energy into decoding text lose the ability to get meaning from what they are reading. Poor readers often spend a great deal of their cognitive resources on decoding and have little left for comprehension (Therrien, 2004). Many studies have shown that poor readers spend less time reading than fluent readers. As non-fluent readers struggle more, they spend less time reading and their skills will deteriorate causing an increasing knowledge gap with their fluent peers (Huang, Nelson, & Nelson, 2008). A lack of fluency directly affects a student's ability to comprehend text.

According to the National Reading Panel (National Reading Panel, 2000), reading can be broken into five core components: phonemic awareness, phonics, fluency, vocabulary, and comprehension (National Reading Panel, 2000). Acquisition of these five skills is crucial to

becoming a successful reader. Lacking competence in any of these components can directly affect other reading components and even other subject areas.

Phonemic awareness is the ability to distinguish and manipulate the forty-four fundamental sounds that make up the spoken English language (Rickenbrode & Walsh, 2013). Phonemic awareness instruction is often conducted in preschool and kindergarten. Some examples of phonemic activities are rhyming games, identifying sounds in words, and blending sounds. Often times ELL students will receive phonemic awareness instruction in later grades if they are new to the English language. Young students' early grasp of phonemic awareness can be a future predictor of reading success.

Students with strong phonemic awareness are ready for direct phonics instruction. Phonics is the knowledge that letters of the alphabet represent phonemes and that these sounds are blended together to form words (National Reading Panel, 2000) The NRP suggests early, explicit, and systematic phonics instruction (2000). Phonics instruction generally takes place in kindergarten through third grade. However, students that lack these skills should receive phonics instruction into upper elementary school. Students that lack strong phonics skills will spend the majority of their energy decoding words.

As students become stronger decoding words, reading instruction begins to focus more heavily on fluency. Fluency is the ability to read with speed and accuracy (Therrien, 2004). Many experts believe fluency was often forgotten or misunderstood in the near past. Most experts now agree that fluency needs to be an integral part in an elementary reading curriculum. Rasinski (2014) states reading fluency has two essential components. The first essential component is word recognition needs to be accurate and effortless. Accurate and effortless word recognition is often referred to as automaticity. The second component is prosody, also known

as, expressive reading. The more natural this process becomes the more a reader can focus on the meaning of a passage, which is the ultimate goal of reading.

Students improve oral reading fluency to a greater extent when receiving systematic, guided fluency practice instead of simply being encouraged to read silently more (National Reading Panel, 2000). Most experts agree direct, daily fluency instruction is needed for students to improve reading fluency. However, experts do not necessarily agree on the best method to guide this process. There are numerous fluency interventions out there. Read Naturally and Lexia are a couple of popular computer based interventions, while repeated readings and the six minute solution are common teacher led interventions.

An often forgot piece of the reading puzzle is vocabulary. Vocabulary acquisition is not always obtained through the reading process. Vocabulary is learned in a variety of ways both inside and outside of the school day. Students need to be exposed to rich vocabulary in their conversations and within the text they read on a daily basis. Students need the opportunity build and develop their reading vocabularies through an assortment of practices (Rickenbrode & Walsh, 2013). Many schools are seeing an influx of ESL students enrolling in their school. This opens up many questions as to how vocabulary is being implemented in classrooms

Repeated Reading

Repeated reading is a reading strategy that was originally developed by Dahl and Samuels. Repeated readings is a daily intervention. It should be used as a supplement to the general reading curriculum. Students are assigned reading passages in their instructional reading level. A student's instructional reading level means they will read with ninety to ninety-five percent accuracy. In order to find a student's instructional reading level, some sort of reading inventory should be given.

Repeated reading can be incorporated in a number of different ways. Repeated reading is a strategy that has readers read a passage several times. They will read the passage for one to two minutes. A teacher, paraprofessional, or partner times the student recording miscues and omissions. At the end of the reading, the recorder will total up the words read after one minute as well as miscues and omissions. They will review the miscues and omissions before the next timed reading. The goal is for the student to increase wcpm and increase accuracy each time a passage is read to the teacher, paraprofessional, or partner. Many studies have shown that by consistently following the intervention, the growth in fluency and accuracy will be maintained and increase on new cold read passages.

This method of reading a passage over and over allows the student to increase reading speed by improving automaticity. Non-fluent readers need this additional practice to help build word recognition and to allow them to decode words more smoothly (Roundy & Roundy, 2009). It is vital to repeated reading success to use passages at a difficulty level that requires the student to reread the selection three to four times to achieve satisfactory fluency (Therrien, Gormley, & Kubina, 2006).

Students need to have some prerequisite skills in order to use repeated reading as an intervention. Therrien and Kubina (2006) recommend that students read at a first grade instructional level at minimum. Students that lack foundational reading skills would be better served with an intervention focusing on phonemic awareness, phonics, or sight words, depending on his or her specific needs.

Accuracy is another added benefit of repeated reading. Students will become more accurate with each reading of a passage. When the student makes mistakes, the teacher will provide the correct word for each student miscue. There are different ways to make these

corrections, but it is important that the teacher reviews the miscued words with the student prior to timing them.

Repeated reading can have other benefits for struggling readers. One of these benefits is that oral reading expression often improves. This allows readers to be more confident in their oral reading. More importantly it can help them draw meaning from what they read.

One of the benefits of the repeated reading strategy is that it provides students with almost instant feedback. Error correction allows a student to practice miscues and read them correctly before rereading the passage. The students are able to see their words read correctly increase and miscues decrease as they read the passage multiple times. Often times teachers will have students chart their progress daily. Providing performance feedback can be a motivator for students because it allows them to explicitly see their progress (Therrien & Kubina 2006).

As a student becomes more fluent and spends less energy and thought on decoding words, they will be able to improve comprehension skills. Comprehension is the ultimate goal of reading. It is important to continue monitoring comprehension, as well as fluency. Results should go hand in hand. Alber-Morgan (2006) recommends including a brief comprehension strategy to enhance repeated reading. She recommends self-questioning, prediction, and retell to name a few.

There are consistent reports that show repeated reading is an effective intervention that improves reading fluency (Lee & Yoon Yoon, 2017). Repeated reading can be implemented with very little training and does not take large quantities of time. It can be implemented in different ways.

Lexia Core 5

Lexia Core 5 targets students with reading difficulties in grades pre-kindergarten through 5th grade. It is an online program that uses a blended learning approach. This simply means that Lexia Core 5 is a computer supplement to the general reading curriculum. Lexia Core 5 is designed to help fill reading skill gaps. Lexia targets six areas of reading instruction: phonological awareness, phonics, structural analysis, automaticity/fluency, vocabulary, and comprehension. These six reading components incorporate the NRP's five reading components, with the addition of structural analysis.

Students beginning Lexia reading are given an auto-placement test. The placement test is completed online. When the students have completed the test, they will be placed at a level where their skills broke down. Students will be assigned a weekly usage goal. The prescribed time usage is generally between twenty and eighty minutes per week depending on the level of need. Students work their way through lessons building skills and progressing to higher levels as they master skills along the way.

There are many perceived benefits to using Lexia Core 5 as a reading intervention. Lexia Core 5 provides explicit, systematic, personalized learning, targeting skill gaps as they emerge, and it gives teachers data and resources teachers can use to provide additional instruction for individuals or small-group instruction. It gives students differentiated, individualized reading instruction based on their needs at the level they are currently working. This program can be a benefit to teachers by saving them the time and energy of trying to pinpoint where students are breaking down. It also has ready made lessons that teachers can use when students continue struggling with a specific skill within Core 5.

The individualized, systematic, and structured approach of Lexia Core 5 can be particularly effective in accelerating the reading growth of ELL students (Schechter, Macaruso, Kazakoff & Brooke, 2015). Second grade students in a study in Orange, California using Lexia Core 5 made substantial gains on DIBELS oral reading fluency. Over 90% of students in this school are Hispanic. At the beginning of the school year, 84% of these students assigned the Lexia intervention were one or more grade levels behind in the program. By the end of the year, 29% of these students met grade level benchmarks and an additional 41% were working within their grade level (Wilkes, Macaruso, Kazakoff & Albert, 2016).

In a study conducted by Schechter, Kazakoff, and Bundschuh during the 2014-2015 school year, teachers already incorporating Core 5 in their classrooms were invited to join a contest on meeting usage requirements. The contest was based on students meeting weekly usage time goals. The participating classes were compared to non-participating classrooms. The usage contest classes saw the percentage of students meeting their weekly minutes go from 63% before the contest to 68% during the contest. These same classes saw the average reading units increase from 98 units before the contest up to 114 units during the contest. On the contrary, non-participating classes saw the percentage of their students meeting weekly goals remain relatively flat. These classes went from 52% meeting usage requirements before the contest to 53% during the contest. Units gained also remained relatively unchanged, going from an average of 79 before the contest to 85 during the contest. These numbers show a correlation between teacher engagement, usage, and growth.

Studies have shown that an engaged teacher is critical for Lexia Core 5 to be successful. Teacher fidelity and monitoring of students is critical. Much of the student's time is spent on the computer without the aid of a teacher. It is important teachers receive the training they need to

implement the program well. A key component of Lexia Core 5 is the availability of online reports that include actionable data and are updated in real time (Schechter, Macaruso, Kazakoff & Brooke, 2015). It is critical that teachers check on the progress students are making and delivering the ready made lessons Lexia provides for students that are failing to master a certain skill. When teachers are engaged in the implementation of a blended learning reading program as designed, their students accomplish more in the program than the students of neighboring teachers who are less engaged (Schechter, Kazakoff, Bundschuh, Prescott, & Macaruso, 2017).

As computers become more and more a part of everyday classrooms, so has the rise in online reading software being marketed to schools. Historically, CAI has been found to be a valuable supplementary aid to support reading acquisition, particularly for struggling students (Schechter, Macaruso, Kazakoff & Brooke, 2015). There are still many questions remaining concerning Lexia Core 5 and CAI, in general, but preliminary results look positive.

Methods

Participants

The intervention participants were a sample of forty-two students in grades three through five in a rural, public school in the northwest corner of Iowa during the 2016-17 school year. The study consisted of twenty-four males and eighteen females. Nineteen of the forty-two students in the study were ESL students. It was a mixed socio-economic group of students. The average class size for students in this study was 23.2 students. There are three sections of each grade level at this particular school.

The participants in this intervention were selected based on their fluency scores on the FAST fluency testing system. The students were tested during the winter screening period. The selected students were all below the grade level benchmark set by the State of Iowa.

Materials

The FAST universal screener was the the fluency assessment given to all students before interventions were put in place and at the conclusion of interventions. This was the same system used for weekly progress monitoring probes. The universal screener was administered by a trained testing team from within the elementary school to ensure that results were accurate.

Lexia Core 5 was one of the intervention programs used. The Path to Reading Excellence in School Sites, also known as PRESS, intervention materials were also used for administering the repeated reading interventions.

Procedures

Reading interventions were assigned to elementary students that did not meet the FAST benchmark words per minute for the winter testing period. FAST is the statewide fluency screener used in the majority of public schools in the state of Iowa. All students that did not meet the benchmark were assigned a reading intervention. This study looked at two different fluency interventions and how they impacted students' reading rate. This study targeted third, fourth, and fifth grade students in need of fluency help. Students' growth was measured by comparing FAST winter and spring universal screener results. It also looked at the six week midpoint fluency results to compare intervention results over the first and last six weeks. Twenty students received the Lexia reading intervention while twenty-two received repeated readings during this twelve week period.

The students that participated in this research project were students that did not meet the benchmark and were not currently receiving special education or Title I reading services. This meant that the classroom teacher would be conducting the students' interventions in a 15 minute daily time block.

After the winter screening period, the MTSS team met with all three grade level teams to determine what intervention they felt they could best implement in their classroom. Teachers, instructional coaches, and the building principal all had input. Current and past fluency scores, DRA Levels, STAR scores, MTSS notes, and previous interventions administered were some of the different areas that the team looked at when determining which intervention would best fit the students in each classroom.

After interventions were chosen, the teacher was taught how to implement the intervention. The teacher then taught the repeated readings students the basic protocol as a whole group.

The Lexia students were taught how to log in to the program on their laptops and/or iPads. The teacher monitored the first day to make sure students understood the program and did not have technology issues. After the first day, teachers would check in every day or two to see if specific skill work lessons had been assigned from the Lexia program. When a lesson was assigned, the teacher would take a student, or small group of students, and reteach the specific skill the student was lacking.

The reading interventions were administered four times per week for 15 minutes each day. The classroom teacher gave each of these intervention students a one minute progress monitoring passage once a week through the FAST system. Words per minute and accuracy were each charted. The data was reviewed by the teachers and also analyzed monthly by the MTSS team.

Results

The purpose of this study was to compare repeated readings and Lexia Core 5 interventions in different populations of third through fifth grade students. The results were measured in words read correctly in one minute FAST fluency progress monitoring and benchmark reading probes. The study was conducted over a twelve week period. Students given the interventions began the twelve week period averaging 114.6 correct words per minute. Students averaged 134.5 correct words per minute at the conclusion of the intervention for an average gain of 19.8 words or 1.66 words per week. The pretest, midpoint, and posttest fluency results for all students receiving an intervention are included below in Figure 1.

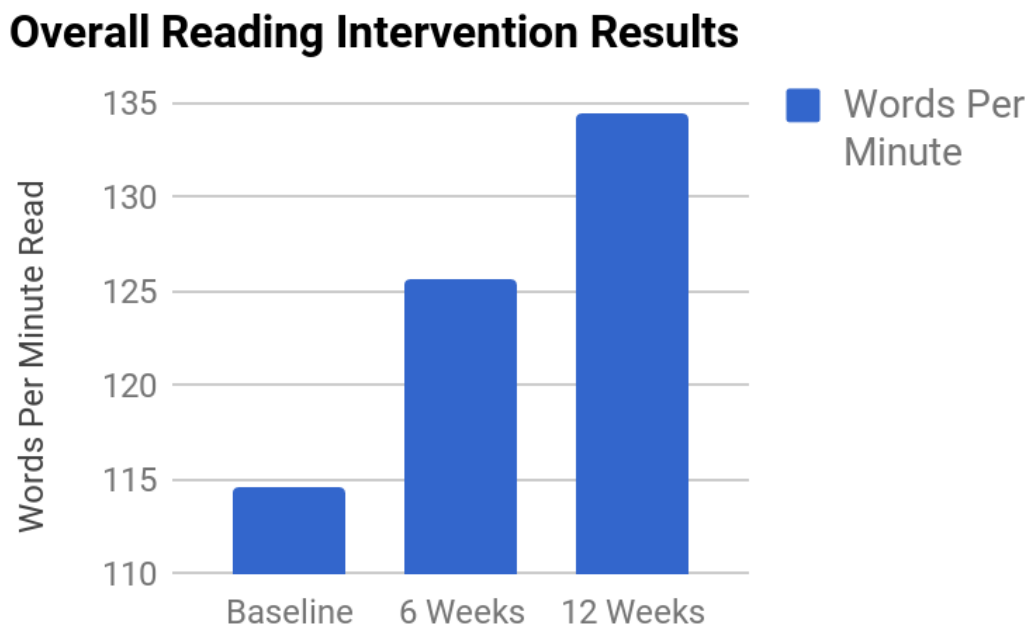


Figure 1. Fluency scores for all students given interventions

Students in third, fourth, and fifth grades were given either the Lexia intervention or repeated readings. Students given the Lexia intervention read an average of 105.7 words in one minute on their pretest. At the six week midpoint, the Lexia students read an average of 119.1

words in one minute for an average gain of 13.4 words per minute. At the conclusion of the twelve week intervention, the Lexia students read an average of 125.3 words per minute. The gain from the the six week midpoint to the conclusion was an average of 6.4 words per minute. The overall gain was 19.8 words per minute.

Students in need of an intervention, that were not given the Lexia intervention, participated in a repeated readings intervention. The average pretest score for students in repeated readings was 122.7 words per minute. At the six week midpoint, repeated readings students scores had increased to 131.5 words per minute for an average gain of 8.8 words per minute. At the conclusion of the twelve week intervention, students in repeated readings read an average of 142.5 words per minute for a gain of 11.0 words per minute from week six to week twelve. The overall gain was 19.8 words per minute for repeated reading students. Figures 2 and 3 represent the average words gained by students in Lexia and repeated readings interventions over the first six weeks, second six weeks, and total twelve weeks.

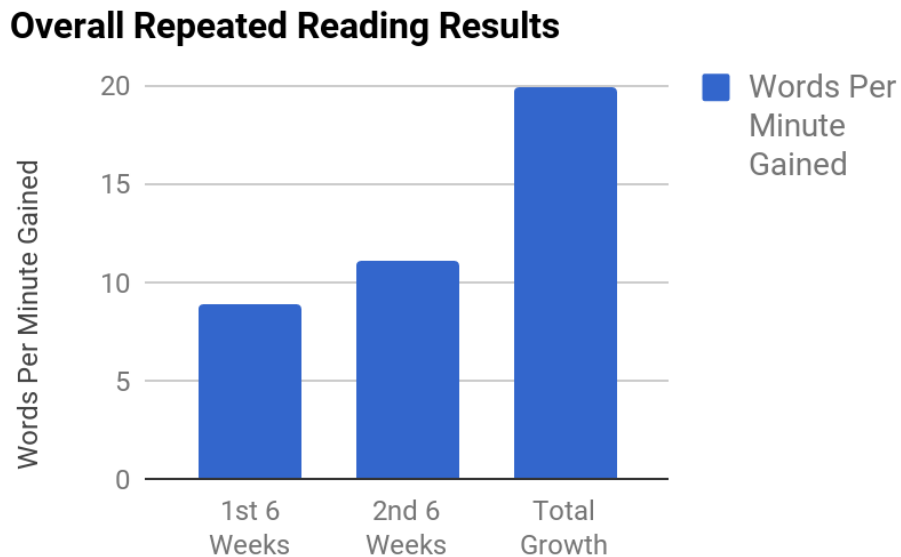


Figure 2. Fluency scores for all students using repeated reading intervention

Overall Lexia Results

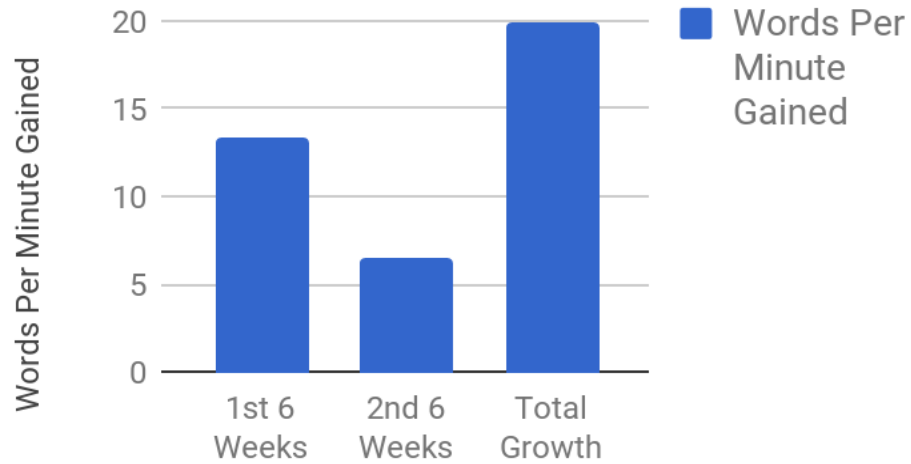


Figure 3. Fluency scores for all students given Lexia reading intervention

Figure 4 represents how many words per minute ESL students gained on their reading fluency over the course of the twelve week intervention. ESL students using Lexia made an average gain of 22.2 word per minute over the course of the first six weeks of the intervention. These same students averaged a 5.2 word gain over the final six weeks of the intervention for a total of 27.4 words per minute over 12 weeks. Students using the repeated readings intervention made an average gain of 10.9 words over the first six weeks and 8.9 words per minute over the second six week period. Repeated reading students made an average gain of 19.8 words for the twelve week intervention.

ESL Student Results

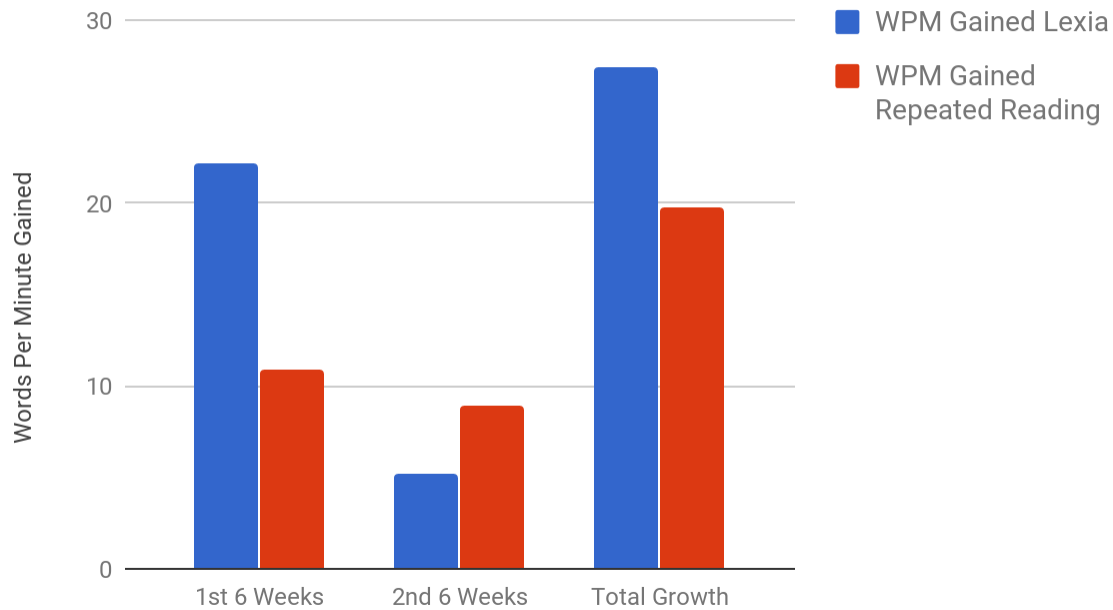


Figure 4. Fluency scores for ESL students

Students receiving reading interventions that take part in the Free and Reduced Lunch program are represented in Figure 5. FRL students using the Lexia intervention gained an average of 17.2 word per minute in the first six weeks of the intervention and 4.0 words per minute over the last six weeks of the intervention. FRL students using the repeated readings intervention gained an average of 7.7 words per minute over the first six weeks of the intervention and 11.3 words per minute in the last six weeks of the intervention. Overall, the FRL students using Lexia gained an average of 21.2 words per minute, while the repeated readings students averaged a gain of 19.0 words per minute.

Comparison of FRL Students Using Lexia and Repeated Readings

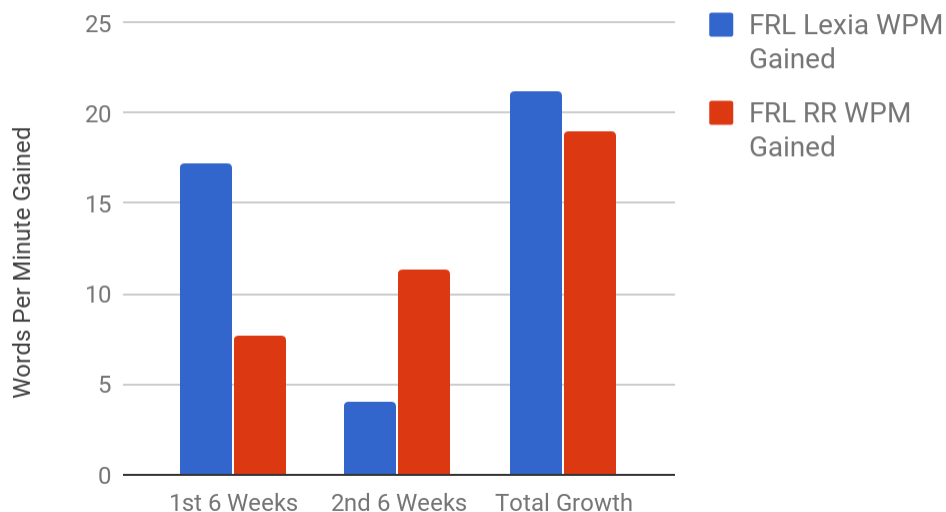


Figure 5. Fluency scores for FRL students

Figure 6 shows the results of repeated readings based on the gender of students. Males using repeated readings had an increase of 4.4 words per minute over the first six weeks of the intervention. Male scores increased by 14 words per minute during the second half of the repeated reading intervention for a total of 18.4 words per minute.

Females using repeated readings saw their words per minute increase by 11.3 words per minute over the first six weeks of the intervention and 9.3 words per minute over the second six weeks. Females increased their total words per minute by an average of 20.6 words per minute. This was 2.2 words per minute more than the males average total.

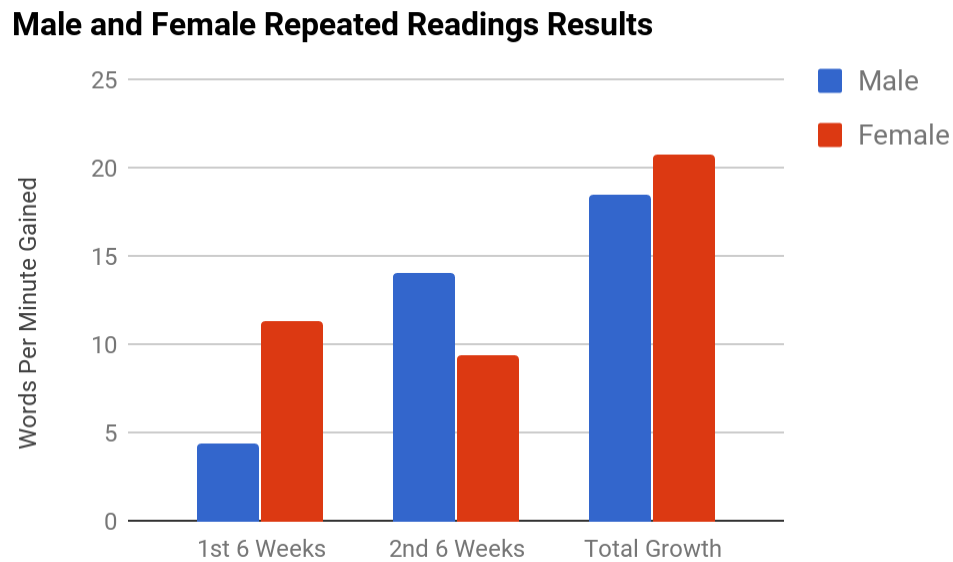


Figure 6. Repeated reading fluency scores by gender

Figure 7 shows Lexia reading intervention results based on gender. Males saw their scores increase by an average of 14.0 words per minute during the first six weeks of the intervention, while females gained 11.2 words per minute over the same time frame. Males words per minute dropped significantly in the second half of the the intervention to 4.9 words per minute for a total of 18.9 words per minute for twelve weeks. Females gained 12.5 words per minute in the second six weeks of the intervention for a total of 23.7 words per minute. Females increased by 4.8 words per minute more than males using Lexia during the same twelve week time frame.

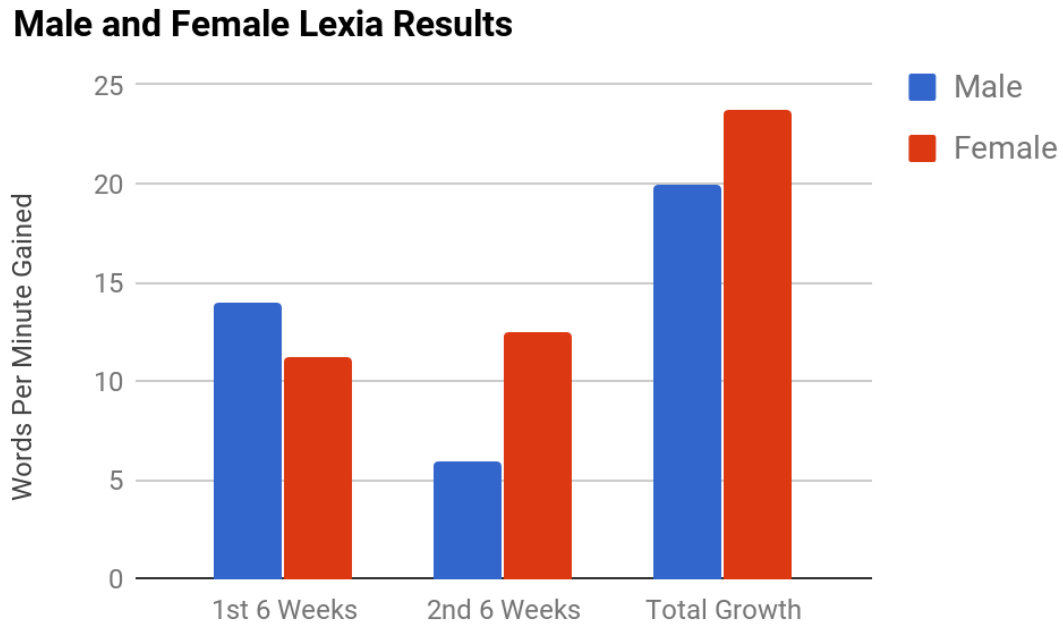


Figure 7. Lexia fluency scores by gender

Conclusion

The results of this data indicate that reading fluency gains were made for students using both Lexia and repeated readings interventions. The forty-two students in third, fourth, and fifth grades enrolled in either Lexia or repeated readings interventions gained an average of 19.8 correct words per minute over the twelve week intervention. Students using both Lexia and repeated readings made overall identical gains of 19.8 correct words per minute over the twelve week intervention. This breaks down to 1.66 words gained per week of the intervention. The FAST system used as a universal screener and to progress monitor students on a weekly basis anticipates an average gain of about 1.5 words per week for an average reader.

This study also looked to determine if these interventions would sustain reading fluency gains throughout the entire twelve week intervention cycle. Despite the identical 19.8 correct words per minute for both Lexia and repeated readings, the midpoint and final test gains varied

greatly between the two interventions. Lexia students made an average gain of 13.4 words over the first six weeks of the intervention and 6.4 words over the last six weeks. Repeated readings students made more consistent gains with an average of 8.8 words and 11.0 words, respectively.

ESL and FRL students were monitored closely throughout this twelve week period. ESL students using Lexia made an average gain of 27.4 correct words per minute, while ESL students using repeated readings gained only 19.8 words per minute. FRL students showed gains of 21.2 correct words per minute using Lexia and only 19.0 words using the repeated readings intervention. According to these results, Lexia appears more effective for FRL and ESL students than repeated readings.

Gender was a final area that was looked at in this study. Females made larger gains than their male counterparts. Females gained an average of 21.4 correct words per minute throughout the twelve weeks. They gained an average of 23.7 words using Lexia and 20.6 words using repeated readings. Males made overall gains of 18.7 words per minute. They gained nearly the same using Lexia and repeated readings. Males had gains of 18.9 words in Lexia and 18.4 words per minute using repeated readings. Females appear to make slightly better gains using Lexia than repeated readings, while males made roughly the same gains with both methods.

Overall, students made nearly identical gains when looking at the entire intervention. However, the study shows that both FRL and ESL students made larger gains using the Lexia program. It also showed that Lexia students generally made their biggest gains during the first six weeks of the intervention, while repeated reading students had more even results but made slightly higher gains over the second six week period.

Limitations

Even though the study showed that both Lexia and repeated readings were beneficial to struggling readers, there were some limitations to this study. One of the biggest drawbacks was the scope of the study. This study took place in one school and only involved forty-two third through fifth grade students. When breaking students down by ESL status, there were nine Lexia participants and ten repeated readings participants. There were ten FRL students that received the Lexia intervention and fifteen that received repeated readings. If this study could have involved more students and more grade levels, the data may have been more definitive.

A second limitation was the starting point for students enrolled in each of the interventions. The 20 students taking part in Lexia had an average baseline score of 105.7 correct words per minute, while the twenty-two students in repeated readings had a baseline of 122.7 correct words per minute. The difference of seventeen correct words per minute may help explain why Lexia students were able to gain an average of 4.6 words per minute more than repeated reading students within the first six week time period. Teachers conducting these interventions were consulted, but were ultimately allowed to choose which intervention their students were given. It may have been more beneficial to start the Lexia and repeated readings students with roughly the same average baseline.

A last limitation of this study would be how the interventions were administered. In general, the repeated readings were teacher led and administered. However, after following up with teachers, some said there were days that students were partnered up and listened to each other read their passages due to time constraints. Teachers also confirmed a number of days where the schedule was altered and didn't allow for either intervention to be administered on that

given day. One teacher giving the Lexia intervention forgot to give the mini lessons based on areas of need. This affected four Lexia students in the fifth grade.

A recommendation for future study would be to spend more time training teachers in intervention methods to ensure consistent administration of the intervention.

References

Alber-Morgan, S.R., (2006). Ten Ways to Enhance the Effectiveness of Repeated Readings.

Journal of Early and Intensive Behavior Intervention, 3(3), 273-279.

Huang, L.V., Nelson, R.B., & Nelson, D. (2008). Increased Reading Fluency through

Student-Directed Repeated Reading and Feedback. *The California School Psychologist, 13, 33-40.*

Lee, J., & Yoon Yoon, S. (2017). The Effects of Repeated Reading on Reading Fluency for

Students with Reading Disabilities: A Meta-Analysis. *Journal of Learning Disabilities, 50(2), 213-224.*

Lyon. G.R., & Moats, L.C., (1997). Critical Conceptual and Methodological Considerations in

Reading Intervention Research. *Journal of Learning Disabilities, 30(6), 578-588.*

National Reading Panel (U.S.), & National Institute of Child health and Human Development

(U.S.). (2000) Report of the National Reading Panel: Teaching children to read: An

evidence-based assessment of the scientific research literature on reading and its

implications for reading instructions: reports of the subgroups. Washington, D.C.:

National Institute of Child Health and Human Development, National Institutes of

Health.

Rasinski, T., (2014). Delivering Supportive Fluency Instruction-Especially for Students Who

Struggle. *Reading Today, 31(5), 26-28.*

Rickenbrode, R., & Walsh, K. (2013). Lighting the Way: The Reading Panel Report Ought to

Guide Teacher Preparation. *American Educator, 37(2), 30-35.*

- Roundy, A.R., & Roundy, P.T. (2009). The Effect of Repeated Reading on Student Fluency: Does Practice Always Make Perfect? *International Journal of Human Sciences* 4(1), 54-58.
- Schechter, R.L., Kazakoff, E.R., Bundschuh, K., Prescott, J.E., & Macaruso, P. (2017). Exploring the Impact of Engaged Teachers on Implementation Fidelity and Reading Skill Gains in a Blended Learning Reading Program. *Reading Psychology*, 38(6), 553-579.
- Schechter, R., Macaruso, P., Kazakoff, E.R., Brooke, E., (2015). Exploration of a Blended Learning Approach to Reading Instructions for Low SES Students in Early Elementary Grades. *Computers in the Schools*, 32(3-4), 183-200.
DOI:10.1080/07380569.2015.1100652
- Therrien, W.J. (2004). Fluency and Comprehension Gains as a Result of Repeated Reading. *Remedial and Special Education*, 25(4), 252-261.
- Therrien, W.J., & Kubina, R.M. (2006). Developing Reading Fluency with Repeated Reading. *Intervention in School and Clinic*, 41(3), 156-160.
- Therrien, W.J., Gormley, S., & Kubina, R.M. (2006). Boosting Fluency and Comprehension to Improve Reading Achievement. *Teaching Exceptional Children*, 38(3), 22-26.
- Wilkes, S., Macaruso, P., Kazakoff, E. & Albert, J. (2016). Exploration of a Blended Learning Approach to Reading Instruction in Second Grade. In *Proceedings of EdMedia 2016-- World Conference on Educational Media and Technology*, (pp. 797-802). Vancouver, BC, Canada: Association for the Advancement of Computing in Education (AACE).

