


The Effects of Sight Word Development Using Technology and Best Practices

By

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Abstract

In this action research study, I measured students' ability to read and spell high-frequency words, then completed twelve lessons and activities using technology to support learning. Students used Seesaw to manipulate words, write sentences using the words in context and practiced spelling each word. After the twelve lessons students were tested on their ability to read and spell the same high-frequency words that were used in their daily activities. Through this research students recognition of high frequency words and spelling of them improved.

Keywords: sight words, high-frequency words, second-grade, action research, digital literacy

The Effects of Sight Word Development Using Technology and Best Practices

This year has started off in a unique way because of COVID-19, a virus which is responsible for a global pandemic. COVID-19 has created an unstable learning environment for students and teachers. Last school year, 2019-2020, the students at my school finished first grade with three months of distance learning; all education took place through the online platform called Seesaw. Seesaw is a digital portfolio app used to post pictures and videos of children as well as communicate with parents using its private messaging feature. Teachers created Seesaw activities and conducted daily online synchronous lessons that provided the days' direct instruction. In the fall of 2020, these same students started second grade. The families of these students were given two options: "dial mode" or "distance learning." Dial mode students are the students that switch between learning models: all in person, hybrid and distance learning. Distance learning model is where students would be at home learning through video calls and online learning platform Seesaw activities. The students participating in this mode did not attend any face to face instruction.

Throughout the school year, the district has adjusted the amount of time students spend at school according to the governor's recommendations. The students who were part of the "dial" model started the school year started in the hybrid setting, they then went to all distance learning and are now back to in person learning. Education for these students and us as teachers has changed completely in the last year and caused many challenges as well as opportunities. One of the many downfalls to this new type of teaching and learning is that students have missed out on a lot of educational opportunities due to no fault of their own. During distance and hybrid learning students were not getting as much direct instruction as they would have during a normal educational day. Students missed a lot of the basics that I normally work on with the students

during guided reading or guided writing. Guided reading over video calls was challenging, because I was not able to meet the individual needs of each student as I couldn't hear them individually read. When the second graders came to school in the fall, my second grade teacher team noticed that the students did not know as many sight words as past incoming second graders. I noticed this a lot in their reading and writing at the beginning of the year. High frequency words were often read incorrectly or sounded out or spelled incorrectly.

I want my students to know the sight words that are so frequent in their reading. COVID-19 makes this an interesting time in my life and the lives of my students. The technology they are using is important because it has become their classroom. Even now, as we are fully in person, a lot of our lessons and activities are done through the Seesaw platform, as students still need to be at least three feet apart which limits the amount of activities we can do in the classroom.

High frequency words are important to my students because the words help the students become stronger readers. Students who know high frequency words by sight do not need to stop to sound the word out and rather can read through a sentence fluently. With my students spending so much of their learning time on iPads, I wanted to know if daily, digital sight word instruction could help students learn both the first grade words they "missed" because of COVID-19 and the new second grade words they are learning now. In the past I have not focused much on sight words as a teacher and have not directly taught them, but this year school my second grade team and I will be focusing on sight words during our reading blocks.

The questions I focussed on for this study include: How does using technology daily affect students' memory of sight words? How do research-based best practices help students develop sight word knowledge?

Literature Review

Learning to read is a lifelong process and a large part of the words we read are called high frequency words. In this literature review I looked at different studies regarding sight words and high frequency words, how to teach these words and digital technology which is used often in my classroom. In this literature review you will read what I learned about the different areas before I started my action research project.

Word Recognition

As readers engage with a text, the majority of the words they encounter will be high frequency or sight words. Knowledge of these allows a reader to have better comprehension of a text and better fluency (Murray, McIlwain, Wang, Murray & Finley, 2019). Sight words and high frequency words are often used interchangeably but they are defined differently. Sight word is a term used to describe a word that can be looked at and be known by sight, or automatic and effortlessly (Murray, McIlwain, Wang, Murray & Finley, 2019). Sight word knowledge helps readers because they are not stopping to decode each word they are reading, allowing for a smooth pace and an understanding of what they are reading. Students who know sight words will be better readers.

High frequency words are the words that are frequently present in the texts we read. It is important in reading instruction to teach children to read high-frequency words and irregular words. When children learn to read these it will contribute to reading fluently, which will impact comprehension (Sullivan, 2013). If you do a Google search you will find that there are many high-frequency word lists and sight word lists. Researchers have found sight-word reading helpful to students who struggle with sounding out words. Sight-words are challenging for students because it requires children to store the knowledge in their long term memory (Ehri, 2014). It is important for students to know sight words in order to become more fluent in their

reading, because if students know the words they are reading they do not need to stop and sound them out. This, in turn, helps with comprehension, because if students are able to read without stopping they are more likely to understand what is happening in what they are reading.

Teaching Sight Words

There are many ways and suggestions when it comes to teaching sight words to children. Children learn words better when the word is shown and verbalized at the same time (Rawlins & Invernizzi, 2019). Sight words are also often taught by using flashcards, a method that requires the reveal of a word, a student's response and a reaction from the teacher. Incremental rehearsal is the most effective method used to teach sight words knowledge. (Kupzyk, Daly, & Andersen, 2011). This method is when students practice the words over and over again, like flashcards. Students are given known words and a few unknown words and are shown the words on a flashcard. Once students know the unknown words more are added into the pile. This method is when students practice the words over and over again, like flashcards.

Sight words stick when three things happen simultaneously: meaning, pronunciation, and spelling (Rawlins & Invernizzi, 2019). The meaning of the sight word is important because students need to know that the word has importance. The pronunciation is important because students need to know what the word sounds like and how to say it himself or herself. Lastly, spelling is important because students can then use it in his or her writing, and he or she can connect the spelling of the word to what the word looks like as they read it.

Digital learning

Technology is a big part of all of our lives including students. Technology allows students to be actively involved in his or her learning. Every student in the school district I work for has received an iPad or ChromeBook to make distance learning successful, so each student is

able to work on their high-frequency word needs by manipulating letters, using voice commands, dragging and dropping, drawing pictures and so much more. All of this allows students to take a step beyond what we could do with ordinary typing paper (Baron, 1999). Technology is the main way to teach students using technology instruction during the pandemic.

Technology within a classroom should not be the only tools used to support students. Technology should be used to enhance the curriculum and learning that is happening within a classroom (Goodard, 2002). Using programs like Seesaw, an online learning platform, allows teachers to create engaging lessons through technology. Moving instruction and taking instruction online is beneficial when students are not able to be in the classroom learning, whether from a pandemic or a sick day. Teachers are able to make the lessons at home and send them digitally to their students wherever they are. Teachers are now using technology in their classroom to meet the needs of all students. When teachers do this they are expanding their classroom beyond the four walls, books in the classroom and textbooks.

Seesaw is a classroom platform for meaningful student engagement. The application provides a way for teachers to create and send out assignments and assessments for students to complete. Teachers can find lessons from all over the country to share with their students. Teachers are also able to use Seesaw to differentiate and personalize instruction by adjusting lessons to meet the needs of each student. For students, Seesaw is a way to create a learning profile. Teachers can assign different activities to students throughout the year, as students complete the activities, they are added into a learning profile or portfolio. Teachers, students and parents can see the work of their students throughout the year. Seesaw is also a way for parents to connect to their child's Seesaw page to see what their student has completed and see the growth throughout the year (Seesaw, n.d.)

One-to-One Instructional Approaches

One-to-one teaching is when a teacher is working with one child at a time. The job of a teacher during a one-on-one meeting with a student. The teacher's role in this setting is to respond to the student they are working with. In this setting teachers are able to challenge and support the learner (Harris, 1986). Although my research will not focus on the writing process, it does apply to how a teacher can identify problems and strengths while teaching one-on-one. A teacher has the opportunity to really get to know a student during this time and will allow him or her to personalize the instruction and meet the needs for the individual child (Grant & Carey, 2014, p.3).

Methods

Setting and Participants

The students who participated in my study were the students in my classroom. They were a group of 26 second graders. 16 out of my 27 students had parent permission to participate in the study. All of the students in my class will be participating in the same daily classwork as the students who will be participating in the study; however their data was not included. The majority of the study took place in February of 2021. After the pre assessment only 9 students' data were included in my action research.

The school I work at is an urban public elementary school in Minnesota. It has around 315 students, about 45 students in each grade level. There are two sections in each grade level that have students participating in the "dial model" and about one section per grade level that is being taught virtually. The students that were in my class and part of my study are part of a "dial

mode” meaning that they switched between different forms of education: in-person, hybrid and distance learning. All students were doing in-person learning for the entire length of the study. All activities took place on an iPad through the online learning platform Seesaw, meaning students were able to participate no matter their place of learning. Some students in this study receive special education services and Title I, along with English language services. My study consisted of five boys and four girls. Students are identified as six white students, one hispanic student, and two black students.

Data Sources

The data that was collected was through quantitative and qualitative methods. I collected data through spreadsheets. To collect data I used Fountas and Pinnell’s High- Frequency Word Lists (Fountas and Pinnell, 2018) to create two shorter lists of my own. I took words off of this list randomly. The word lists I used contained 100 or 200 words. The process would have been too time consuming for me to complete with my students. I started each pre-assessment using 30 words and as students gained familiarity with the words I added new words. The first word list consists of 45 words from Fountas and Pinnell’s First 100 High- Frequency Word list (Fountas and Pinnell, 2018), I will refer to this as List 1. The second word list consists of 54 words from Fountas and Pinnell’s First 200 High- Frequency Word list (Fountas and Pinnell, 2018), I will refer to this list List 2 (Appendix A).

Pre- Assessment

I first assessed the students using the first list. I wrote each word on a flashcard and showed the students, one-by-one, each word for three seconds. If students knew the word, I marked the word on a spreadsheet. I went through all of the words until I completed the first assessment with all of the students. Students were then assessed on the spelling of the words that

they knew by sight. The spelling assessment was completed in small groups based on the words that students knew by sight. For this, each student had a whiteboard, marker and eraser and were asked to spell the words. If students spelled it correctly, I marked in on my spreadsheet, then I gave the next word until the list of the words was completed. Each word was worth two points, students could get one point for knowing the word by sight and another point for spelling the word correctly. Students who scored 80% or higher on List 1 were given List 2. I started this study with 16 students, but seven of those students scored 95% or higher on List 2. These students are not part of the data I collected.

Post- Assessment

After twelve days, I administered a post-assessment. The post assessment included the 22 words students had worked on throughout the last twelve days. Students had to identify the word when I presented one on a flashcard within three seconds and had to spell the words that they were able to identify. For students in List 2, I had students write the word in a sentence and, for some students, they were able to tell me a sentence verbally. I allowed students to tell me the sentence verbally as a time saver. The pre and post assessment were very time consuming and I felt that if students could tell me a sentence rather than writing one it would be just as acceptable. I wanted to determine if students knew the meaning of the words in addition to spelling them correctly. I only assessed students on words that we had focused on during the prior three weeks.

The nine students who participated in the data collection were divided into two groups, and for twelve school days they were taught how to spell the sight words, how to use the word in the correct context and how to identify the word, through Seesaw. I observed students as they completed the activities and made notes in a Word document. I set aside time during Reading

Workshop at the end of the day for students to complete the activity, which took around fifteen minutes.

Procedures

From the students' performance on the pre- assessment, I created two groups and selected the words that each group would focus on. When selecting the words to use for this study I looked at two things: the number of students who missed the word by sight and the number of times students who knew the word by sight but spelled the word incorrectly. For example, if Student A knew the word, "what" by sight, the word would get one point. If Student A could then spell the word, "what," would get another point. However, if Student B did not know the word by sight that word would not get any points. Students were not asked to spell words that they did not know by sight. The words with the least amount of points because the focus words.

When selecting the group that the student would be in for my study, I looked at two things: the amount of times the student missed a word by sight and the amount of times the student missed the spelling of a word. Each student was able to get two points for each word. The students who scored less than 85% of the points are in group one. The students who scored higher than 85% on Assessment 44 moved to List 2.

Table 1

Group 1 - List 1	Group 2 - List 2
A, D, E, F, H, I	B, C, G
than, back, after, away, your, when, them,	because, with, their, several, anything,
because, before, two, mother, where, could, were,	probably, through, hour, large, clothes,
don't, said, one, with, five, their, going, our	suddenly, couldn't, happen, themselves,

directions, scared, nothing, someone, either,
state, might, I'd

Both groups focused on learning these words by sight, learning how to spell the words and knowing the meaning. For the next twelve days, Monday through Friday, students were taught the words and completed a daily activity on Seesaw. Each day I talked about four to five words, each word was focused on three times during the three weeks. During the discussion, I introduced each word, asked students if they knew the meaning, read the students a definition, used the word in a sentence, and looked at the spelling. Many times we focused on the regular and irregular word spellings. Once the words were taught the students then completed the activity on Seesaw. The Seesaw activities were something I created to meet the needs of my study. During these activities, students listened to a recording of the word being read and used in a sentence to help with the meaning of the word. Students manipulated the word by moving the letters in the correct place, I called this: *Word Manipulation*. Students wrote the words in a sentence in the correct context, I called this: *Using the Words in Context*. Lastly, students listened to a voice recording of me saying the word and using the word in a sentence, then the students wrote down the word, I called this activity: *Hear then Spell*. The sentences that were read to the students that they then had to read had future or past sight words included. Throughout the weeks of the activities, I encouraged the students to use these words in their writing.

I created the Seesaw activities as follows:

Word Manipulation: Students moved the letters from the alphabet below to create their high-frequency words for that day. Below is an example of group 2's Seesaw activity.

Figure 1

everything
hour
large
I'd
themselves

1.
2.
3.
4.
5.

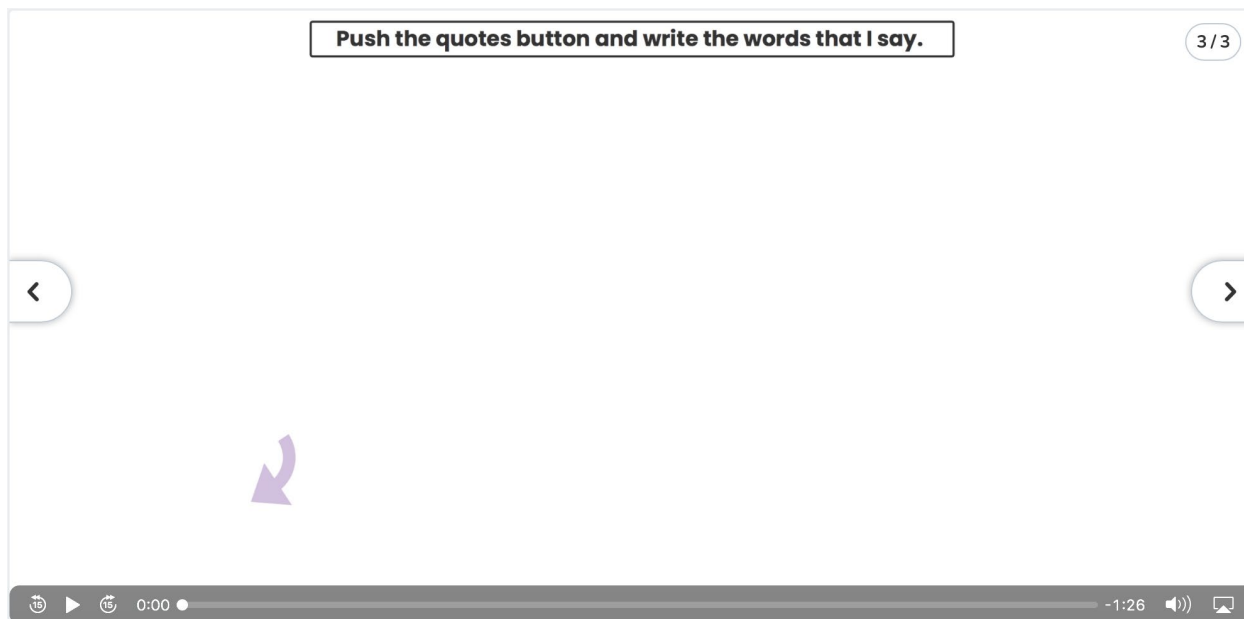
a b c d e f g h i j k l m n
o p q r s t u v w x y z

Using the Words in Context: Students used the typing tool to write five sentences using the five high-frequency words. After they wrote five sentences they used the microphone button to record the sentences.

Figure 2

Use all five words from today's list in a sentence using the typing tool. Record your sentences using the microphone.

Hear then Spell: Students listened to me say the words and used the words in a sentence and then spelled the words using a pen tool in order to avoid auto correct. Students were also asked to not return to page 1 or 2, and do the best they can when spelling the words.

Figure 3

See Appendix B for completed activity examples.

Results

Below are two tables that consist of the results from the Pre List 1 and the Pre List 2. Each table consists of the 22 lowest scoring words. Group 1 will focus on 22 words and Group 2 will focus on 22 different words. In Appendix C you can see the entirety of Pre List 1 and the Pre List 2.

Pre Assessment Results (Appendix C)

Nine students took Pre List 1. Ten words: “about,” “back,” “came,” “have,” “any,” “just,” “four,” “very,” “ride,” and “that,” resulted in a sight score of 100%, meaning all nine students identified the word within three second. From the 45 words I took the words with the least point value to become the words that would be focused on for Group 1. Three out of nine students, Student B, C and G, scored 85% or higher when scored on sight and spelling. These four students moved to List 2.

The table below shows the results from List 1. The words in the table were the 22 words with the lowest scoring totals. The left column shows the sight score for the words. If a student knew the word by sight, the word received the point. Each word could receive up to nine points. In the left column there are the words that correspond to the sight score, after each word, in parentheses, is the total number of students who could spell the word over the total number of students who knew the word by sight.

Table 2***Pre List 1 (Appendix C)***

Sight score number correct/total students	Word (spell score/number of students)
9/9	Back (5/9),
8/9	After (5/8), don't (4/8)
7/9	because (2/7), before (3/7), two (4/7), mother (5/7), one (4/7), with (4/7), them (4/7)
6/9	Away (3/6), when (3/6), could (3/6), said (2/6), five (4/6), their (1/6), , going (5/6), our (3/6), where (3/6)
5/9	Than (2/5), were (2/5)
4/9	Your (2/4)

Pre assessment List 2 was completed by three students. Of the 54 words, 31 words resulted in a sight score of 100%, meaning the three students were able to identify the word within three seconds. Out of those 31 words, 24 words had a spelling score of 100%. Students in Group 2 will focus on the words in the table below. This list consists of three words from Pre

List 1, the three words were, “with,” “because,” and “their.” I included these three words because students B, C, and G, scored lower points on these words than on words in List 2.

Table 3

Pre assessment List 2 (Appendix C)

Sight score number correct/total students	Word (spell score/number of students)
3/3	I'd (2/3), because (1/3)
2/3	Several (1/2), throught (0/2), hour (0/2), state (2/2), might (2/2), happen (0/2), direction (1/2), nothing (2/2), someone (2/2), either (2/2), scared (0/2), with (1/2), their (0/2)
1/3	Everything (1/1), large (1/1), clothes (0/1), suddenly (0/1), couldn't (0/1), themselves (1/1)
0/3	Probably (0/0),

Post- Assessment Results (See Appendix D)

During the post assessment, each student made an improvement when it came to knowing high frequency words by sight. The word that gained the greatest amount of points was “than,” which had an improved sight score of two and an improved spelling score by four. This means two students who didn't know the word “than” by sight during the pre assessment knew the word during the post test, and four students who didn't spell “than” correctly during the pre assessment spelled the word accurately during the post assessment. Four words, “when,” “them,” “because,” and “could,” had no change in sight or spelling when it came to the pre and post assessment. Student F knew the word “your” by sight during the pre assessment but did not during the post assessment, which resulted in a negative sight point. Student E had the greatest improvement with 8 additional words spelled correctly.

Table 4***Post List 1***

Number correct/total students	Word (spell score/number of students)
6/6	Back (6/6),
5/6	Than (4/5), after (3/5), don't (4/5), one (3/5), with (4/6)
4/6	Them (2/4), because (1/4), before (3/4), two (2/4), were (1/4), said (1/4), five (3/4), their (2/4), going (3/4)
3/6	Away (2/3), when (1/3), where (1/3), could (0/3), our (2/3)
2/6	Mother (2/5)
1/6	Your (1/1)

Group 2 had greater improvements than Group 1. All 22 words were known by sight by the three students in Group 2 during the post assessment. The words, “clothes,” “scared,” “everything,” “probably,” “through,” “large,” “suddenly,” “couldn't,” “happen,” and “themselves,” had the greatest improvements by gaining four to five points when being scored for sight and spelling. Although my research was not centered around students knowing the meaning of the high-frequency words, I did check to see if students in Group 2 could use the sight word in context. Students B and C were able to use all 22 words correctly in a verbal sentence.

Table 5***Post List 2 (Appendix D)***

Spell score (out of 3)	Word
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3	With, several, because, everything, through, hour, state, large, clothes, might, I'd, suddenly, couldn't, happen, themselves, direction, nothing, someone, either, scared
2	
1	Their, probably

In tables six and seven I created an overview of each students' scores for the pre assessment and post assessment. Table 5 shows a breakdown of students who were assessed on List 1. Student D had lost one point for the word recognition while students E, H and I had no change. Students A and F both had a word recognition improvement. Students D, E, F, H, and I all had spelling improvements while student A lost one point.

Table 6

List 1

Student	Gender	Pre-test Recognition	Post test Recognition	Difference	Pre-test Spelling	Post Test Spelling	Difference
A	F	10	15	+5	8	7	-1
D	M	7	6	-1	1	3	+2
E	M	19	19	0	8	16	+8
F	M	15	17	+2	3	7	+4
H	M	20	20	0	7	10	+3
I	F	9	9	0	3	7	+4

Table 5 shows a breakdown of students who were assessed on List 2. Students B, C, and G were able to identify all 22 words on List 2, and all three students showed significant point gains on spelling. The point gains were between 12 and 17, meaning students were able to spell 12 - 17 more words correctly on the post assessment from the pre assessment.

Table 7**List 2**

Student	Gender	Pre-test Recognition	Post test Recognition	Difference	Pre-test Spelling	Post Test Spelling	Difference
B	M	16	22	+6	8	21	+13
C	F	11	22	+11	3	20	+17
G	F	12	22	+10	9	21	+12

Observational Data

During the activity portion of my research students would complete the High Frequency Word Work during our reading workshop. The Seesaw activity would be something they needed to complete by the end of each day. Both Group 1 and Group 2 completed all twelve lessons. Most students completed during the planned twelve days, however two students from Group 1, finished lessons either at home or after the twelve days were finished. Three students did two lessons in one day because they had missed a day or did not finish the lesson the day it was assigned. When students needed to complete two lessons in a day, they completed one during morning work time and the other during the scheduled time.

The lessons took place at the beginning of our Reading Workshop. Students in Group 1 sat in the front of the classroom to learn the words that they would be using for that day while Group 2 worked at something else related to the Reading Workshop. I then taught the words to the students, I showed the words to the group, talked about the meaning, used the words in context, and checked to see if students could relate to the word. Once I felt like the majority of students would be able to do the activity successfully, I sent them to work on the activity at their spot, and Group 2 came up and learned their words. Both groups completed the activities in the

classroom while something else was going on. This caused distraction for some students who were not able to focus on the task.

The *Word Manipulation* activity seemed to be the most frustrating for students, they would get mad at how glitchy their iPads became, so instead of dragging the letters to the box to spell the word they would use the pen tool to write the word. Many students in Group 1 struggled to write sentences on the Using Words in their Context activity. Students oftentimes would go to slide three, *Hear then spell*, and listen to my sentence and write what I had said. Group 2 did not struggle with writing sentences in context. On the slide, *Hear then spell*, many students started off week one using the text tool so that the iPad would make the word correction for them. We had many conversations about having a growth mindset and how mistakes help our brains grow. By week two most students were using the pen tool to write their words.

Students did seem to enjoy *Word Manipulation* the most at the beginning, because the word was on the slide and they were using their finger to drag and drop. By the end of the study this activity became monotonous and students no longer enjoyed it. The least favorite activity for both Group 1 and Group 2 was *Using the Words in Context*. This seemed to be the most difficult. Not only were students trying to focus on spelling the word correctly, but they also were trying to use the word in the right tense, and use the word accurately.

Discussion

In this study, I explored sight word development through the use of technology while using different strategies I found while researching. Overall students who participated in List 2 activities made the greatest improvements, by being able to recognize all of the words by sight and were able to spell a majority of them. I'm thinking that their ability is directly linked to their reading levels as all three students read at or above grade level. Students who took part in List 1

did not make as great of improvements but some students did have considerable gains when it came to spelling the words. The overall growth should help students with increased word recognition which will help students with their reading, and their fluency and comprehension.

From my experience as a teacher, I see that students love being on their iPads. However, when the district I work for switched from distance learning to in-person learning, students seemed sick of using technology. During distance learning, this was their only tool for learning. I tried hard to have students use Seesaw minimally during the weeks that I did this study so they would not be tired of using their iPads. I asked students in my classroom a few questions regarding the activities they had been completing. The question with the greatest amount of comments was, Did you enjoy doing this daily activity? Students wished I would have switched the activities in Seesaw to add variety or had a day break between lessons. I think that boredom affected their ability to do their second grade best. The sentences they wrote were not as strong the third week as they were week one. Some students were no longer excited to see High-Frequency Work on their reading checklists. From the data the students who benefited most were the students who performed higher on the pre assessment and students who were in Group 2.

During this study, I learned a considerable amount as an educator. As mentioned above, the reality of my action research was much different than my original plan. From this I learned that I needed to be flexible in order to make this as successful for my students as possible. At first, it was very difficult to adjust to being all in person, especially when it came time for students to complete the activities in a classfull of students, but I learned to let go of some control and allow students to do their best in the given situation. When I let go of some control the expectations of my students also needed to change. I wanted activities completed each day, and the time to listen and make sure each activity was done to my expectations. When we switched

learning models, my daily schedule was much busier, so I did not have the opportunity to listen to each students' activity everyday. Had I listened to every post, I could have better progress monitored the students. I could have removed the words the students knew and added words they did not.

Another thing that I needed to be flexible with is technology use. As my sixth year teaching, I have had my fair share of technology problems, but I wanted this research to be successful for my students, so when I ran into problems with Seesaw, I needed to adjust my expectations. Many times throughout the four weeks Seesaw was down, or the slides I was asking students to complete became glitchy. The glitchy screens did not allow students to manipulate the words how I intended them to be. I always had to have an alternative plan. This plan included writing the words on white boards, along with writing sentences. We also found the words in our shared reading text or in students' independent reading books.

Implications

The study has benefitted myself, my students and the school district. I learned that using Seesaw to develop high-frequency words is a way to meet the needs of many students at a time. By creating lessons ahead of time I was able to have two groups working on word work at the same time. I also learned that in order for students to stay engaged I should create different types of activities where students need to do different things with the high-frequency words. I will use the knowledge from both for years to come in order to benefit the students in my classroom. Through my study I see the benefits of using technology to teach high-frequency words. This strategy could be used to continue to teach high-frequency words, sight words and spelling words. The students who participated in my study benefited because they developed their high-frequency word knowledge which will hopefully transfer into their reading. The students are able

to identify words that show up in their daily lives. The study does not seem to have made a difference in my classroom activities, however I am going to continue to do the activities through the rest of the year to see if I can continue to see growth. The district also benefits from this study because, through my work, they are gaining a developing teacher and a growing group of learners. The online platform, Seesaw, was used daily to develop students' high-frequency word knowledge. I will continue to use the knowledge from this study in my classroom for years to come. My students ability to read is so important to me and this study will directly benefit each of them for years to come.

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Appendix A

List 1

Than	About	Back	After	I'm
Been	Big	Came	Away	Your
Who	When	Them	Because	From
Have	There	Any	Into	Just
Little	Make	Before	Two	Four
Mother	Where	Very	Could	Were
Over	Ride	Don't	said	That
One	With	Five	Their	what
But	Here	Going	Our	three

List 2

Sea	Wrote	Again	Carry	Wait
Each	Several	Never	Getting	Earth
Group	Everything	High	Wouldn't	Probably
Through	Against	Hour	Fight	Once
Best	Ready	Free	Show	Build
Draw	State	Kind	Circle	Large
Clothes	Different	River	Might	I'd
Suddenly	Finally	Everyone	Couldn't	Happen
Themselves	Direction	Nothing	Someone	without
Instead	Either	Important	Round	Scared
Wanted	Question	Yourself	answer	

Appendix B

Seesaw Activity
Group 1 Student Work Example

In response to: High Frequency Words group 1

1/3

because
mother
where
were
don't

1. b e c a u s e
2. m o t h e r
3. w h e r e
4. w e r e
5. d o n t

a b c d e f g h i j k l m n
o p q r s t u v w x y z

In response to: High Frequency Words group 1

2/3

Use all five words from today's list in a sentence using the typing tool. Record your sentences using the microphone.

sometimes i ask my mother to play with me bacuse i like when she plays with me.

when im at home when i lose something i dont know where it is.

when im playing with my friends if we all lost something we ask my mother to find it.

we were reading before bed yesterday.

where we were yesterday was at my house.

In response to: High Frequency Words group 1

3/3

Push the quotes button and write the words that I say.

because
mother
where
were
don't

0:00 -1:11

Seesaw Activity
Group 2 Student Work Example

In response to: High Frequency Words group 2

1/3

direction
nothing
someone
either
scared

a b c d f g h i j k l m n
o p q r s t u v w x y z

In response to: High Frequency Words group 2

2/3

Use all five words from today's list in a sentence using the typing tool. Record your sentences using the microphone.

Minnesota is the north-east direction of texas.

Nothing does not rhyme with orange.

In response to: High Frequency Words group 2

3/3

Push the quotes button and write the words that I say.

direction
nothing
someone scared
either

0:00 - 1:08

In response to: High Frequency Words group 2

1/3

The interface shows a list of words: everything, hour, large, I'd, themselves. A word-building tool is active for 'everything', with letters e, v, e, r, y, t, h, i, n, g in individual boxes. A keyboard is visible below with letters a-z in boxes. A list of words is on the left: everything, hour, large, I'd, themselves. A box shows '4. I'd' with a blue arrow pointing to the word.

In response to: High Frequency Words group 2

2/3

Use all five words from today's list in a sentence using the typing tool. Record your sentences using the microphone.

I love everything in school.

I have one hour of dance on Monday.

are used to have a large stuffed animal.

i'd like a piece of pizza.

In response to: High Frequency Words group 2

3/3

Push the quotes button and write the words that I say.

everything
hour
larger
i'd them self-
SS

0:00 -1:26

Ride	9/9	7/9	16/18 89%	X	X	X	X	X	X	X	X	X
Don't	8/9	4/8	12/17 71%	X	X	X		X	X	X	X	X
Said	6/9	2/6	8/15 53%		X		X	X	X	X	X	
That	9/9	6/9	15/18 83%	X	X	X	X	X	X	X	X	X
One	7/9	4/7	11/16 69%		X	X	X	X	X	X	X	
With	7/9	4/7	11/16 69%	X		X	X	X		X	X	X
Five	6/9	4/6	10/15 67%		X	X		X	X	X	X	
Their	6/9	1/6	7/15 57%	X	X			X		X	X	X
What	6/9	6/6	12/15 80%	X	X			X	X	X	X	
But	8/9	7/8	15/17 88%	X	X		X	X	X	X	X	X
Here	8/9	8/8	16/17 94%	X	X	X		X	X	X	X	X
Going	6/9	5/6	11/15 74%	X	X	X		X		X	X	
Our	6/9	3/6	9/15 60%	X	X	X	X		X	X		
three	8/9	7/8	15/17 88%	X	X	X		X	X	X	X	X
SIGHT				3 3 / 4 5	4 4 / 4 5	3 9 / 4 5	2 0 / 4 5	4 2 / 4 5	3 5 / 4 5	4 4 / 4 5	4 2 / 4 5	3 0 / 4 5
SPELLING				2 5 / 3 3	4 1 / 4 4	3 2 / 3 9	2 / 2 0	2 8 / 4 2	2 0 / 3 5	3 4 / 4 4	2 5 / 4 2	2 1 / 3 0

Total points				5 8 / 7 8	8 5 / 8 9	7 1 / 8 4	2 2 / 6 5	7 0 / 8 7	5 5 / 8 0	7 8 / 8 5	6 7 / 8 7	5 1 / 7 5
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FOUNTAS AND PINNELL 200 HIGH FREQUENCY WORD LIST

*Yellow highlight indicates correct spelling

* Pink highlight indicates words with less than 80% accuracy

WORD	Sight	Spell	Total points/% correct	B	C	G
Sea	3/3	2/3	5/6 83%	X	X	X
Wrote	2/3	2/2	4/5 80%	X	X	
Again	3/3	3/3	6/6 100%	X	X	X
Carry	2/3	2/2	4/5 80%	X		X
Wait	2/3	2/2	4/5 80%	X	X	
Each	3/3	3/3	6/6 100%	X	X	X
Several	2/3	1/2	3/5 60%	X		X
Never	3/3	3/3	6/6 100%	X	X	X
Getting	3/3	3/3	6/6 100%	X	X	X
Earth	3/3	3/3	6/6 100%	X	X	X
Group	3/3	3/3	6/6 100%	X	X	X
Everything	1/3	1/1	2/4 50%	X		
High	3/3	2/3	5/6 83%	X	X	X
Wouldn't	2/3	2/2	4/5 80%	X		X
Probably	0/3		0			
Through	2/3	0/2	2/5 40%	X	X	

Against	2/3	2/2	4/5 80%	X	X	
Hour	2/3	0/2	2/5 40%	X	X	X
Fight	3/3	3/3	6/6 100%	X	X	X
Once	3/3	3/3	6/6 100%	X	X	X
Best	3/3	3/3	6/6 100%	X	X	X
Ready	3/3	3/3	6/6 100%	X	X	X
Free	3/3	3/3	6/6 100%	X	X	X
Show	3/3	3/3	6/6 100%	X	X	X
Build	3/3	3/3	6/6 100%	X	X	X
Draw	3/3	3/3	6/6 100%	X	X	X
State	2/3	2/2	4/5 80%	X		X
Kind	3/3	3/3	6/6 100%	X	X	X
Circle	3/3	3/3	6/6 100%	X	X	X
Large	1/3	1/1	2/4 50%	X		
Clothes	1/3	0/1	1/4 25%		X	
different	3/3	3/3	6/6 100%	X	X	X
river	3/3	3/3	6/6 100%	X	X	X
might	2/3	2/2	4/5 80%	X	X	
I'd	3/3	2/3	5/6 83%	X	X	X
suddenly	1/3	0/1	1/4 25%	X		
finally	3/3	2/3	5/6 83%	X	X	X
everyone	3/3	2/3	5/6 83%	X	X	X
Couldn't	1/3	0/1	1/4 25%	X		
Happen	2/3	0/2	2/5 40%		X	X
Themselves	1/3	1/1	2/4 50%	X		
Direction	2/3	1/2	3/5 60%		X	X
Nothing	2/3	2/2	4/5 80%	X		X
Someone	2/3	2/2	4/5 80%		X	X

Without	3/3	3/3	6/6 100%	X	X	X
Instead	3/3	3/3	6/6 100%	X	X	X
Either	2/3	2/2	4/5 80%	X	X	
Important	3/3	2/3	5/6 83%	X	X	X
Round	3/3	3/3	6/6 100%	X	X	X
Scared	2/3	0/2	2/5 40%	X		X
Wanted	3/3	3/3	6/6 100%	X	X	X
Question	3/3	2/3	5/6 83%	X	X	X
Yourself	3/3	3/3	6/6 100%	X	X	X
Answer	3/3	3/3	6/6 100%	X	X	X
SIGHT				49/54	42/54	42/54
SPELLING				42/49	32/42	40/42
Total points /% correct				91/103 88%	73/96 76%	82/96 85%

Appendix D

Post List 1

Group 1

X - pre assessment knew by sight

X - pre assessment knew by sight and correct spelling

C - post assessment knew by sight

C - post assessment knew by sight and correct spelling

WORD	Sight	Spell	A	D	E	F	H	I	Sight improvement	Spelling improvement
Than	5/6	4/5	C	C		X C	X C	X C	+2	+4
Back	6/6	6/6	X C	X C	X C	X C	X C	X C		+2
After	5/6	3/5	X C		X C	X C	X C	X C		+1
Away	3/6	2/3	C		X C		X C		+1	+1
Your	1/6	1/1				X	X C		-1	
When	3/6	1/3	X C		X C			X C		
Them	4/6	2/4		X C	X C	X C	X C			
Because	4/6	1/4		X C	X C	X C	X C			
Before	4/6	3/4	X C		X C		X C	X C		+1
Two	4/6	2/4	X C		X C	X C	X C			
Mother	5/6	2/5	X C		X C	C	X C	X C	+1	
Where	3/6	1/3			X C	X C	X C			+1
Could	3/6	0/3			X C	X C	X C			
Were	4/6	1/4	C		X C	X C	X C		+1	
Don't	5/6	4/5	C X		X C	X C	X C	X C		+3

Said	4/6	1/4		X C	X C	X C	X C			+1
One	5/6	3/5	C	X C	X C	X C	X C		+1	+2
With	5/6	4/6	X C	X	X C	C	X C	X C		+1
Five	4/6	3/4	C		X C	X C	X C			+2
Their	4/6	2/4	X C		X C		X C	X C		+1
Going	4/6	3/4	X C		X C	C	X C		+1	
Our	3/6	2/3	X C	X C		X C				+1

FOUNTAS AND PINNELL 200 HIGH FREQUENCY WORD LIST

X - pre assessment knew by sight

X - pre assessment knew by sight and correct spelling

C - post assessment knew by sight

C - post assessment knew by sight and correct spelling

C - post assessment knew meaning

WORD	B	C	G	Sight improvement	Spelling improvement
With	C	X C	X C	+1	+2
Several	X C	C	X C	+1	+2
Because	X C	X C	X C		+2
their	X C	C	X C	+1	+1
Everything	X C	C	C	+2	+2
Probably	C	C	C	+3	+1
Through	X C	X C	C	+1	+3
Hour	X C	X C	X C		+2
State	X C	C	X C	+1	+1

Large	XC	C	C	+2	+2
Clothes	C	XC	C	+2	+3
might	XC	XC	C	+1	+1
I'd	XC	XC	XC		+1
suddenly	XC	C	C	+2	+3
Couldn't	XC	C	C	+2	+3
Happen	C	XC	XC	+1	+3
Themselves	XC	C	C	+2	+2
Direction	C	XC	XC	+1	+2
Nothing	XC	C	XC	+1	+1
Someone	C	XC	XC	+1	+1
Either	XC	XC	C	+1	+1
Scared	XC	C	XC	+1	+3