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# Video Self-Modeling, Reading Aloud, or Silent Reading: Effects of Strategies on Fluency

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Video Self-Modeling, Reading Aloud, or Silent Reading:

Effects of Strategies on Fluency

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in Partial Fulfillment of the Requirements  
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**Table of Contents**

Abstract.....3

Introduction.....4

Review of the Literature.....6

Methods.....17

    Participants.....17

    Data Collection.....18

    Ethics.....21

    Variables.....22

Findings.....23

Data Analysis.....23

Discussion.....33

    Summary of Major Findings.....33

    Limitations of the Study.....33

    Further Study.....36

Conclusion.....37

References.....38

### Abstract

The purpose of this action research is to explore the most effective strategy for children to engage in during Read to Self to increase their fluency. Fluency is the ability to read with speed, accuracy, and expression; and is an important aspect of being a successful reader. In this study, three 2nd grade classes will engage in different Read to Self strategies. One class will be doing silent reading. Another class will be reading their books aloud to themselves. A third class will be using video self-modeling, which is recording themselves reading their books out loud on Chromebooks and watching the recording at the end of Read to Self time. This study will be a mixed method study. There will be a Curriculum Based Measure (CBM) pre-test and post-test, along with field notes, which will be analyzed for patterns and themes, that will be taken during the Read to Self time in the three classrooms.

## Video Self-Modeling, Reading Aloud, or Silent Reading:

## Effects of Strategies on Fluency

Fluency is one piece of the literacy puzzle. It is an important aspect of a child's overall reading skills. In the past, comprehension and decoding have been studied more often; however, fluency is starting to draw more attention (Mastropieri, Leinart, & Scruggs, 1999; Rasinski & Padak, 2005). Over the last decade people have begun recognizing that fluency needs to be addressed more than it has been in the past. There has been an increasing acknowledgement that fluency is important because of its connection to comprehension (Schwanenflugel, Meisinger, Wisenbaker, Kuhn, Strauss, & Morris, 2006). Comprehension is a vital skill in all areas of school including science, social studies, and math. When students are unable to read fluently, they have a difficult time reading for meaning (Erickson, Derby, McLaughlin, & Fuehrer, 2015). Wu and Gadke (2017) believe that fluency is "one of the most vital dimensions of reading" (p. 91) based on the report from the National Reading Panel (2000).

We have known for a long time that reading out loud to children has great benefits. There has also been research done about the benefits of listening while reading for children (Lionetti & Cole, 2004). But what about children recording themselves reading out loud and listening to it? Does that also have benefits? It has been found that children do not always like to read at home or parents do not have the time to sit down with their child for their child to read aloud to them. That is where the suggestion of recording the child while they are reading comes into the picture. Technology can be fun and exciting for children to use. It is also a way for parents to ensure that their child is reading, without needing to be right next to them.

Some believe that children listening to themselves read is beneficial. In school children hear their teachers read stories out loud using expression, self-correcting, and using good speed.

Some may question if children know what they sound like when they read. Others may wonder if the children can hear the difference between how they read and how others read. Another thought is if there are benefits to hearing themselves read. This action research project examines the question, when a child records themselves reading and listens to it, does fluency improve for early elementary children? Montgomerie, Little, and Akin-Little (2014) asked a similar question, “Therefore, if modeling is a successful component of fluency instruction, would it be more effective if the individual him/herself was the model?” (p. 18).

This topic was chosen because 2nd grade focuses a lot on fluency, accuracy and comprehension. If a child has difficulty with fluency and accuracy, the comprehension piece also seems to be a struggle. First grade is heavy on the basic reading skills and moving to second grade comprehension gets more of the focus. The hope by the end of second grade is that their fluency and accuracy will be on track because as they move up the grades comprehension becomes more and more of the focus. Worthy and Broaddus (2001) agree with the importance of solidifying fluency in the primary grades. “After the primary grades, students are expected to read independently. As the volume and complexity of reading expectations and materials expand, students who are not developing fluency have a hard time understanding and keeping up with schoolwork and often find themselves in increasing difficulty even if they have previously done well” (Worthy & Broaddus, 2001, p. 335).

The method for children recording themselves and listening to it is called video self-modeling. “Video Self-Modeling (VSM) is an intervention that allows individuals to observe exemplary instances of their own behavior on video in order to increase the probability of that behavior occurring again” (Montgomerie, Little, & Akin-Little, 2014, p. 18). According to Buggie (2007) “video self-modeling gives persons the opportunity to view themselves

performing a task just beyond their present functioning level via creative editing of videos using VCRs or video software” (p. 151). In this study, the student’s videos will not be edited. Instead, the students will record their reading on the Chromebooks and watch it right after they record it. This is different than what other studies have done using video self-modeling.

### **Review of the Literature**

In this literature review fluency will be defined and its importance will be explored. Fluency is known as one of the five pillars of literacy (Cassidy, Valadez, & Garrett, 2010). A variety of reading strategies will also be defined, and their importance will be explored: repeated readings, silent reading, reading out loud, and video self-modeling. A wide range of studies conducted using the video self-modeling strategy will be discussed. Lastly, the connection between fluency and comprehension will be reviewed. Fluency is considered as one of the five pillars of literacy, in part, because of its connection to comprehension (Cassidy et al., 2010).

### **Fluency**

Reading fluency is defined as the ability to read with speed, accuracy, and proper expression (NRP, 2000; Begeny, Krouse, Ross, & Mitchell, 2009; Hasbrouck, 2006). It is a key skill that early elementary teachers aim to improve for their students. Comprehension, for many years, has been the main skill but that seems to be changing. Fluency continues to gain attention and recognition in the world of reading (Hudson, Lane, & Pullen, 2005; Therrien & Kubina, 2006). Teachers can get a good idea about a child’s fluency by listening to them read out loud and can easily identify students who are characterized as good readers. Hudson, Lane, and Pullen (2005) state that reading fluency “is one of the defining characteristics of a good reader, and a lack of fluency is a common characteristic of poor readers” (p. 702). If a child is characterized as a poor reader in regards to fluency, then comprehension usually follows the same path. Reading

fluency can also indicate how well a reader can comprehend what they are reading in the present and future (Hasbrouck, 2006; Hudson, Lane & Pullen, 2005; Little, Hart, Quinn, Tucker-Drob, Taylor, & Schatschneider, 2017; Therrien & Kubina, 2006).

“Reading dysfluency inhibits good reading performance in several ways. A reduced reading rate, by definition, means that students read less text in the same amount of time as more fluent readers and therefore will have processed less text to remember, comprehend, or appreciate” (Mastropieri, Leinart, & Scruggs, 1999, p. 278). The less a child reads the less chance the child has to comprehend. Schwanenflugel, Meisinger, Wisenbaker, Kuhn, Strauss, and Morris (2006) describe the reading of a dysfluent reader as excessively slow and laborious (p. 499). When a child puts so much effort into figuring out what the words are, they are not able to put as much thought into comprehending and processing what they are reading. Hasbrouck (2006) puts it this way, “When children read too slowly or haltingly, the text devolves into a broken string of words and/or phrases; it's a struggle just to remember what's been read, much less extract its meaning” (p. 4).

Some might wonder what is considered fluent or dysfluent when it comes to early elementary students. The following chart provides data about early elementary students and WCPM.

2017 Hasbrouck & Tindal Oral Reading Fluency Data

Grade	Percentile	Fall WCPM	Winter WCPM	Spring WCPM
1	90	--	97	116
1	75	--	59	91
1	50	--	29	60
1	25	--	16	34

1	10	--	9	18
2	90	111	131	148
2	75	84	109	124
2	50	50	84	100
2	25	36	59	72
2	10	23	32	43
3	90	134	161	166
3	75	104	137	139
3	50	83	97	112
3	25	59	79	91
3	10	40	62	63

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\*WCPM – Words Correct Per Minute

It is important to remember that WCPM is one piece of the puzzle for children. Hasbrouck (2006) gives a word of warning when basing students' fluency off WPCM. She says, "I urge teachers to use the 50th percentile as a reasonable level of proficiency for students, and keep in mind that it is appropriate and expected for students to adjust their rate when reading texts of varying difficulty and for varied purposes. Pushing every student to reach the 90th or even the 75th percentile in fluency is not feasible or necessary and, for students at or above the expected level in fluency, the instructional time could be better spent by enhancing other critical aspects of reading, such as increasing their vocabulary and becoming better at monitoring their comprehension" (p. 15). For some students they may only ever reach the 50<sup>th</sup> percentile for WCPM because that is what they are able to do in their stage of development. If that is the case, then equipping them with necessary skills – inferring, using context clues, sounding out words, going back and rereading, etc. – is going to be a main way they will gain in their reading. There

are also some individuals who will never read fluently, so giving them those tools is of utmost importance.

### **Strategies Used to Increase Fluency**

Over the years a variety of instructional strategies have been researched and implemented to help children increase their ability to read fluently. Repeated readings, peer tutoring, using computer programs, listening to reading (audiobooks and listening to a skilled reader without the book), and previewing (Mastropieri, Leinart, & Scruggs, 1999; Begeny, Krouse, Ross, & Mitchell, 2009) have been some strategies studied and used in the past to increase fluency and help improve a child's reading skills in general. There are other strategies such as reader's theaters, choral reading, guided reading, and sustained silent reading that have also been implemented in classrooms. Teachers also remind students of the importance of going back and rereading a sentence, reading books at a child's appropriate reading level, paying attention to punctuation, and practicing sight words and high frequency words.

**Repeated Readings.** Repeated readings is a method where students read a passage several times over until they reach a certain level of fluency. Then they move on to a more difficult passage and continue the method over again (Mastropieri, Leinart, & Scruggs, 1999). The more a child reads a book, the more familiar they are with the words in the story, and the more prone they are to become automatic with those words in other settings. It has been found that the repeated reading strategy is most effective for students who read at a 1<sup>st</sup> through 3<sup>rd</sup> grade instructional level, even if the students are in grades second through eighth (Therrien & Kubina Jr., 2006). It does not matter what grade they are in. It matters what instructional reading level they are currently reading at.

Erickson, Derby, McLaughlin, and Fuehrer (2015) conducted an evaluation on Read Naturally, which is a repeated reading fluency program. Read Naturally combines the repeated reading strategy with the listening to reading strategy (Erickson et al., 2015). Students started off by doing a cold read, which is reading a brand-new story out loud to a teacher. This was not a story they have ever seen before, so no previewing took place. After the cold read, depending if they met their fluency goal, it was determined if they needed to listen to the story three times to increase fluency or if they could move on to the next level of stories (Erickson et al, 2015).

It can boost a child's confidence to start them off on stories where they can be successful before moving to more challenging stories. Sometimes intentionally starting students at a lower level of fluency for them to experience that success can be beneficial. If they needed to listen to the story three times, the first time through the students just listened while following along and the next two times they would read the story out loud with the recording while following along (Erickson et al, 2015). The students would practice independently before completing their hot read, which is when the child reads the story to the teacher for a minute and the teacher collects data on their progress. Erickson, Derby, McLaughlin, and Fuehrer (2015) had three participants in their study: a third-grade boy, a third-grade girl, and a fourth-grade boy who were all on IEPs for reading. In the end, all three students who participated in the study increased their words per minute, increased their instructional level of reading, and according to their teacher seemed to have an increase in reading confidence (Erickson et al, 2015).

**Silent Reading.** Silent reading is encouraged for children, usually starting already in first grade. It is a time for students to sit quietly and read a book of their choosing or a book assigned by their teacher. Classes start off reading silently for a few minutes, building stamina, and eventually read silently anywhere from 20 to 30 minutes. Some teachers encourage children to

use whisper phones, stuffed animal reading buddies, or whisper reading to themselves. The question has come up if silent reading is beneficial, and if it is, when should children begin silent sustained reading. The National Reading Panel (2000) concluded, after looking at studies of sustained silent reading (SSR), that they did not find substantial benefits or gains in fluency from using that strategy. Jan Hasbrouck (2006) states, “Silent reading seems like a good idea since it gives students additional practice...But increasing fluency requires more practice, more support, and more guided oral reading than either of these strategies can deliver” (p. 4). For a child who is dysfluent, silent reading might not be the most beneficial way for them to gain fluency. Once a child is a fluent reader, implementing some silent reading would be acceptable. Again, it does not matter if a child is in first grade or fifth grade. It depends on their level of fluency.

**Reading Out Loud.** On a daily basis, early elementary students listen to their teachers, and possibly parents, read to them. It is important for children to hear text being read aloud fluently. “Teachers and parents should also frequently model fluent reading, demonstrating (and sometimes explicitly pointing out) how accurate reading can be done at a reasonable rate and with good phrasing, intonation, and expression” (Hasbrouck, 2006, p. 9). Even at a very young age, babies begin to hear stories being told and books being read. The more exposure a child has to hearing fluent reading, the more modeling they have for their own reading. Another method of children listening to fluent reading out loud is using audiobooks. Audiobooks can come on tape, cd, or they can be accessed on computers. It is helpful for children, especially for early elementary aged children, to follow along in a book so they can begin to recognize the words that are being read out loud.

Another method of reading out loud is for the children themselves to read out loud. Hasbrouck (2006) recommends that children should read out loud to a partner because it gives

them practice reading orally, it gives them a model, and, if the children have been trained properly, it allows the readers to have the opportunity for feedback. Sometimes children will be paired together based on having the same fluency level. Other times a fluent reader will be partnered with a dysfluent reader. This gives the dysfluent reader a chance to hear modeled reading instead of being partnered with someone who is struggling in the same ways. If you train the fluent readers ahead of time, then they can also give help and tips to the dysfluent reader.

**Video Self-Modeling.** Self-modeling is when videos, images, audiotapes, or role plays are conducted so an individual can see himself or herself demonstrating adaptive behavior; whereas video self-modeling is video specific (Hitchcock, Dowrick, & Prater, 2003). The videos recorded for video self-modeling purposes are edited so that only the best behaviors are shown to the person. The researcher has not found a study that used video self-modeling that did not edit their videos. There are different ways of producing the videos. Many use phones, ipads, computers, or video cameras with tripods.

Video self-modeling started back in the 1970s when Creer and Miklich (1970) used a videotape to help a 10-year-old boy with asthma and watching the video tape helped improve the boy's condition. This study was done in a medical setting. The boy was taped conducting both appropriate and inappropriate behaviors (Creer & Miklich, 1970). This way the boy could see both kinds of behaviors displayed and hopefully learn which behaviors were acceptable and unacceptable. When the boy was shown the taped appropriate behaviors over a two-week period, his behavior improved and when he was shown the taped inappropriate behaviors over the next two-week period, his behavior declined (Creer & Miklich, 1970). Noting that his behavior changed based on watching the video, not based on which behavior was appropriate, demonstrated that this method impacted the boy. The study ended with the taped appropriate

behaviors being shown to the boy for two more weeks and his behavior improved again (Creer & Miklich, 1970). Based on the results of the study, it was believed that videotaping and watching the appropriate behaviors helped improve the boy's behavior. This study was conducted in a medical setting, however, over the last several decades video self-modeling has become more prevalent in educational settings.

Video self-modeling is gaining momentum in the educational world regarding reading fluency. However, it has taken many years to make that shift. Video self-modeling is best known for its use with children and adolescents on the autism spectrum. Modeling became popular when Bandura (1977) promoted social modeling to create change in both social and personal areas. Modeling by self or others can create either positive or negative change, depending on the behaviors being modeled.

In a study conducted by Cihak and Schrader (2008) they used video self-modeling and video adult-modeling to determine which kind of modeling was most effective for adolescents with autism spectrum disorder. It has been thought that modeling is most effective when the viewer is watching someone they are familiar with or someone of their own age or gender. Regardless of that thought, both modeling strategies were effective with the four individuals. "Overall, self-modeling and adult modeling were equally effective and efficient at teaching participants chained vocational tasks" (Cihak & Schrader, 2008, p. 17). Modeling can be used with a wide range of ages for children and adolescents. Another study done using video self-modeling in four children ages 4-5.5 with the autism spectrum disorder saw increases in the target behavior (spontaneous requesting) in all participants (Wert & Neisworth, 2003). Overall the video self-modeling was an effective strategy in this study. One of the participants had a delay in the increase of the target behavior but this participant also was not interested in

watching the videos; and eventually he did still show growth during the intervention (Wert & Neisworth, 2003).

Hitchcock, Dowrick, and Prater (2003) carried out a review of 18 studies that involved video self-modeling in school settings which met five strict criteria. Originally, they had looked at over 200 studies but because of their strict criteria less than ten percent of the studies made it into their review. The five criteria were: participants were ages 3-18 who were at risk or had disabilities, studies were set general education, resource, or self-contained classrooms at private and public schools, studies needed dependent variables that included quantitative data, studies needed independent variables of video self-modeling and at least one other component having to do with self-modeling videotapes, video feedforward, self-efficacy, self-esteem, or self-evaluation, and studies needed to be completed prior to April 2001 (Hitchcock et al., 2003). These criteria ensured that the review of the studies would be more accurate, and that information would be not be misrepresented. Many of these studies had to do with various behaviors seen in the classroom such as hand raising, fighting, or being out of seats and only a few had to do with reading fluency (Hitchcock et al., 2003). There was one study that directly related to fluency. Dowrick and Power did that particular study review in 1998 having to do with reading fluency and the words per minute did increase using the video self-modeling strategy (Hitchcock et al., 2003). Overall these studies demonstrated that video self-modeling did increase positive behaviors and academic skills. Hitchcock, Dowrick and Prater (2003) did state, “However, the identification of only 18 studies meeting our admittedly strict review criteria indicated a need for more research” (p. 43).

The following year Hitchcock, Prater, and Dowrick (2004) conducted their own study with video self-modeling that took place in Hawaii with four first grade students who had

fluency and comprehension delays. The study combined video self-modeling and tutoring to strengthen the students' fluency and comprehension. In the end Hitchcock et al. (2004) found that the tutoring increased the student's fluency and comprehension, but they saw the biggest growth when video self-modeling was added.

Another study was done by Montgomerie, Little, and Akin-Little (2014) using video self-modeling with four year 3 students who were behind their peers in fluency but didn't need intense interventions (p. 18-20). In this study, like most video self-modeling studies, the students' videos were edited to ensure they saw themselves reading at their best (Montgomerie et al., 2014). Since the videos were edited, the children did not watch their videos right after their reading. Instead, they watched them the following day before school started. Their results indicated that there was a large improvement right away for two of the students and overall gains for all four students; however, it seemed that there was a gradual decrease in their fluency once the video self-modeling intervention stopped (Montgomerie et al., 2014). This could indicate that the intervention needed to last longer, proper supports weren't in place when the intervention stopped, or another intervention needed to follow for these students.

In the past a variety of other strategies have been used to increase fluency. One strategy, looked at earlier that is commonly used, is repeated readings (Mastropieri, Leinart, & Scruggs, 1999; Erickson, Derby, McLaughlin, & Fuehrer, 2015; Worthy & Broaddus, 2001). There was a study done comparing the progress between children doing repeated readings and video self-modeling. This study was done with four students completing video self-modeling, repeated readings, and a combination of the two strategies. In this study the researchers chose to use iPads and only recorded the voice of the reader, not their image; and they also had an interventionist model the reading for the child right before the child was recorded reading the passage (Wu &

Gadke, 2017). After conducting their study, it was found the repeated reading was more effective than the video self-modeling and did not seem to make much of a difference when combined with repeated reading (Wu & Gadke, 2017).

There was another study that was done comparing fluency strategies. This study was conducted by Martha M. Decker and Tom Buggey, in which they compared video peer-modeling and video self-modeling strategies (2012). Peer-modeling is a more popular strategy to increase fluency than video peer-modeling. There has not been a lot of research done on video peer-modeling thus far. In the study, there were nine students ages 8-12 with labeled learning disabilities who participated, and they were split up into three groups: video self-modeling, video peer-modeling, and comparison/control group (Decker & Buggey, 2012). Both video self-modeling and video peer-modeling seemed to increase the students' fluency. The greatest gain was over 85 words per minute using the video self-modeling strategy and the lowest gain was 20 words per minute using the video peer-modeling strategy (Decker & Buggey, 2012). Another added benefit to the gains in fluency was also the positive effect it had on the students' attitudes about reading and other classwork. "Both the classroom teacher and special education teacher commented that there was an "enthusiasm" that generalized to classroom performance as they observed changes in the VSM participants' attitudes toward other classroom work...Qualitative data taken from teacher journals also indicated positive changes for students in the peer modeling group especially directed to the reading process (Decker and Buggey, 2012, p. 175).

Video self-modeling is becoming more of a global strategy used as it continues to be explored and studied. Sen (2016) has begun research in Turkey about how video self-modeling can be helpful in improving fluent readers and speakers. Sen's (2016) research did not involve any participants. It is not a common or widely used strategy at this point, but as it continues to

gain popularity hopefully it will be used more often. Another country that has been researching video self-modeling is England (MacLeod, MacMillan, & Norwich, 2007). MacLeod et al. (2007) conducted a study of children ages 6-13 within seven different schools and all of the children selected were at least one year behind in their reading scores. The research done in England was different than the research done in Turkey. New Zealand is also among the countries studying video self-modeling. Montgomerie, Little, and Akin-Little (2014) had four Year 3 participants who were ages year 7 and 3 months to 8 years and 1 month. None of these children were receiving other interventions and were a part of the core reading group in their classroom (Montgomerie et al., 2014). These children, like the children in the study done in England, were also reading behind their peers. In both studies, the children who participated did make great gains.

Knowing the importance of fluency for early elementary children and having further research done on the question “when a child records themselves reading and listens to it, does fluency improve for early elementary children?” is important. Many other strategies such as silent reading, choral reading, repeated reading, reading out loud, peer tutoring, and listening to reading have been studied, researched, and examined. The examination of studies done in the past and present will hopefully help equip adults and teachers with better understanding and give students the best tools and ways to improve fluency. The researcher believes that video self-modeling could be a key strategy to increase fluency in early elementary children

## **Methods**

### **Participants**

The action research project took place in the three second grade classrooms at Sioux Center Christian School. It is in a rural community in Northwest Iowa. There were 50 students

participating in the study. The students range in age were between 7 and 8 years old. There were 24 boys and 26 girls. Students were split into the classrooms as evenly as possible for behavioral and academic needs. The researcher used all three classes to conduct the study.

### **Data Collection**

The purpose of this study was to find out if video self-modeling was an effective strategy to increase students' fluency. Another purpose of this plan was to find out what strategy was the most effective for increasing fluency: video self-modeling, reading aloud, or reading silently. This plan took place over 7 weeks. The first week the students took their curriculum-based measure (CBM) with our resource teacher, Miss Mulder. The CBM tested and collected data for students' correct words per minute (CWPM). Then there was a five-week study from September 4 - October 15 (a total of 25 days but actually 6 weeks on the calendar due to days off) where the students used the strategies of video self-modeling, reading aloud, or silent reading during Read to Self. Each 2<sup>nd</sup> grade class used a different strategy. The researcher's class used video self-modeling. Mrs. Stoub's class used reading aloud. Miss Woudstra's class used silent reading. In the seventh week the students took their CBM again with the resource teacher.

On September 4, when we started using the strategies during Read to Self, the researcher explained to the students how we would be doing Read to Self with their book bags, filled with their own book choices, using the Chromebooks. The researcher showed students how to record themselves and how they would watch and listen to themselves. The researcher explained that this is called video self-modeling and the researcher modeled the process for them. For the reading aloud classroom, the teacher explained to the students that they would be doing Read to Self with their book bags that contain books of their choice and reading their books aloud to themselves. For the silent reading classroom, the teacher explained to the students that they

would be doing Read to Self with their book bags that contain books of their choice and reading their books silently to themselves.

The implementation for week 2 through week 5 of the study (September 4 - October 15) the procedure would be the same. In the video self-modeling classroom, students read to self for 10 minutes with their own book bags and book choices. They recorded themselves while they read using the Chromebooks. While the students read, the researcher took note if the students were 'on task' or 'off task'. At the end of the ten minutes, students watched and listened to themselves reading. They did not watch and listen to the full ten minutes of their reading but instead watched in between three and five minutes of the video. The researcher chose to do this because of the possibility of losing their attention if they watched the full ten minutes. Like stated earlier in this study, the researcher did not edit any of the students' videos. Instead, the students recorded their reading on the Chromebooks and watched it right after they recorded it. The app the students used for video self-modeling was called School Video Recorder for Google Drive. When the app opened the students named their video according to the date. For example, September 21 was named S21. The students then recorded their video, both picture and sound, and then the app uploaded right into their Google Drive account. Once it was in the Google Drive account, the video either needed to be downloaded or was ready to watch.

In the reading aloud classroom, students read to self for 10 minutes with their book bags that contained books of their choice. During their time, the students read their books aloud to themselves. While the students read, Mrs. Stoub took note if students were 'on task' or 'off task'. In the silent reading classroom, students read to self for 10 minutes with their book bags that contained books of their choice. During their time, the students read their books silently. While the students read, Miss Woudstra took note if students were 'on task' or 'off task'.

For the quantitative data collection, the researcher used the AIMSweb Curriculum Based Measure (CBM) fluency test. This test was given at the beginning of the study for the fluency pretest, which measured CWPM and then again at the end of the study for the fluency posttest, which measured CWPM. The AIMSweb CBM does not have validity but it has a reliability score of .90 (Daniel, 2010). We have used this CBM for many years at our school and have found that it measures fluency accurately. All the students read the same passages.

Qualitative data was collected about students being 'on task' or 'off task' in all three strategies during the Read to Self time. The researcher chose to collect this data to see if there was any correlation between time on task and growth for CWPM. There were field notes, in the form of +/- signs and anecdotal notes, written every other minute for the 10 minutes Read to Self was occurring. The teacher noted if the students were 'on task' or 'off task' by using +/- signs. In the silent reading classroom, on task behavior was considered as students reading their books silently. In the reading aloud classroom, on task behavior was considered as students reading their book out loud. In the video self-modeling classroom, on task behavior was considered as reading their books out loud while their computer was recording them. Off task behavior in the silent reading classroom was considered as students looking around the room, paging through their book, getting up to get drinks or go to the bathroom, choosing new books from the classroom library during the reading time, or talking with classmates. Off task behavior in the reading aloud classroom was considered as students looking around the room, paging through their book, getting up to get drinks or go to the bathroom, choosing new books from the classroom library during the reading time, talking with classmates, or reading their book silently instead of reading aloud. Off task behavior in video self-modeling classroom was considered as students looking around the room, paging through their book, getting up to get drinks or go to the

bathroom, choosing new books from the classroom library during the reading time, talking with classmates, not recording themselves when it was time to record, or reading silently instead of reading aloud.

### **Ethics**

The researcher does not believe that she had any personal bias in this action research project. However, to make sure that no bias was occurring in the study, all students in second grade were participating in the class they were assigned this past spring. Students were observed in all three classrooms by the classroom teacher, paraprofessionals, and/or a student teacher.

This action research project did not need IRB approval because it met all of Northwestern's IRB exemption guidelines. The action research project does not pose risk to the participants (Northwestern College Institutional Review Board, 2017). Reading is a normal activity done in 2nd grade and they read in many ways with many different books. The action research project was conducted in classrooms at school during normal school hours (Northwestern College Institutional Review Board, 2017). The action research project was about a regular practice, Read to Self, in classrooms (Northwestern College Institutional Review Board, 2017). The researcher compared normal Read to Self practices to students who record themselves and listen to their reading. When presenting the findings, the students were assigned letters for their identities to ensure anonymity and protection.

### **Variables**

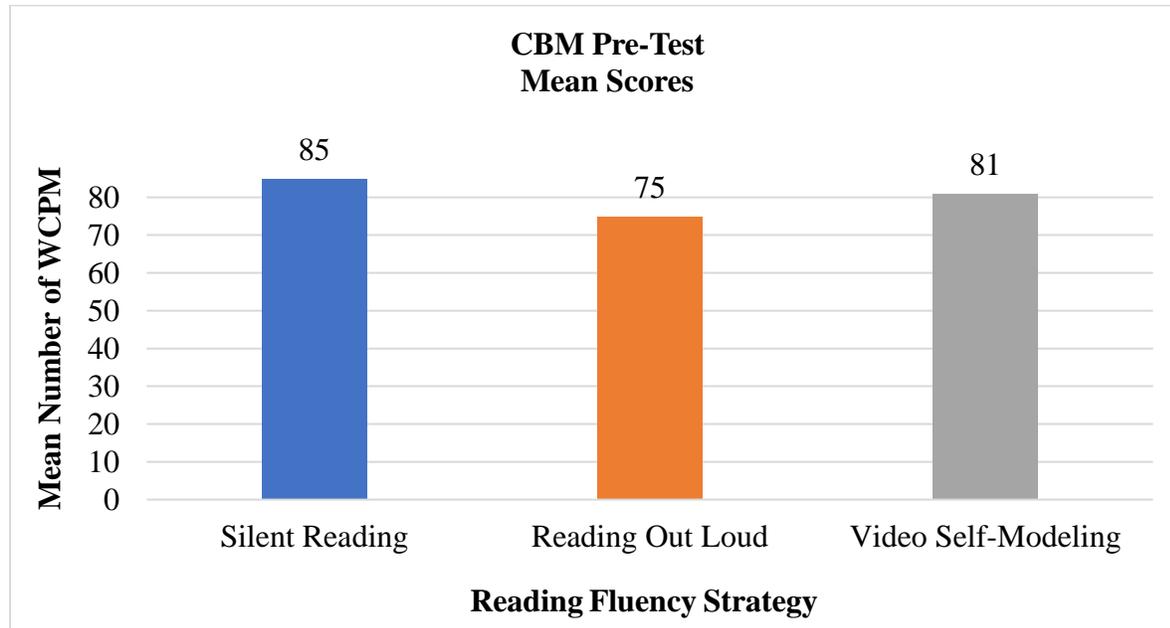
The independent variables of this study were the reading strategies: video self-modeling, reading aloud, and silent reading. Originally, the researcher was only going to have two variables in her own classroom which were video self-modeling and silent reading. However, the researcher was concerned that reading aloud could be construed as the impactful variable instead

of video self-modeling. This way we could see the impact of all three strategies on fluency. The dependent variable of this study are the fluency scores collected at the beginning of the study and at the end of the study.

## **Findings**

### **Data Analysis**

**Quantitative data analysis.** The quantitative data collected from the pre-test and post-test showed all but two students increased in their WCPM in 2<sup>nd</sup> grade. The two students who decreased in their WCPM, Student O in the silent reading group and Student B in the video self-modeling group, were the top two readers when the CBM pre-test was conducted in August. Before the intervention, the silent reading group had a mean score of 85 WCPM. The reading aloud group had a mean score of 75 words per minute. The video self-modeling group had a mean score of 81 words per minute. Figure 1 shows that all three second grade classrooms were close in their WCPM.



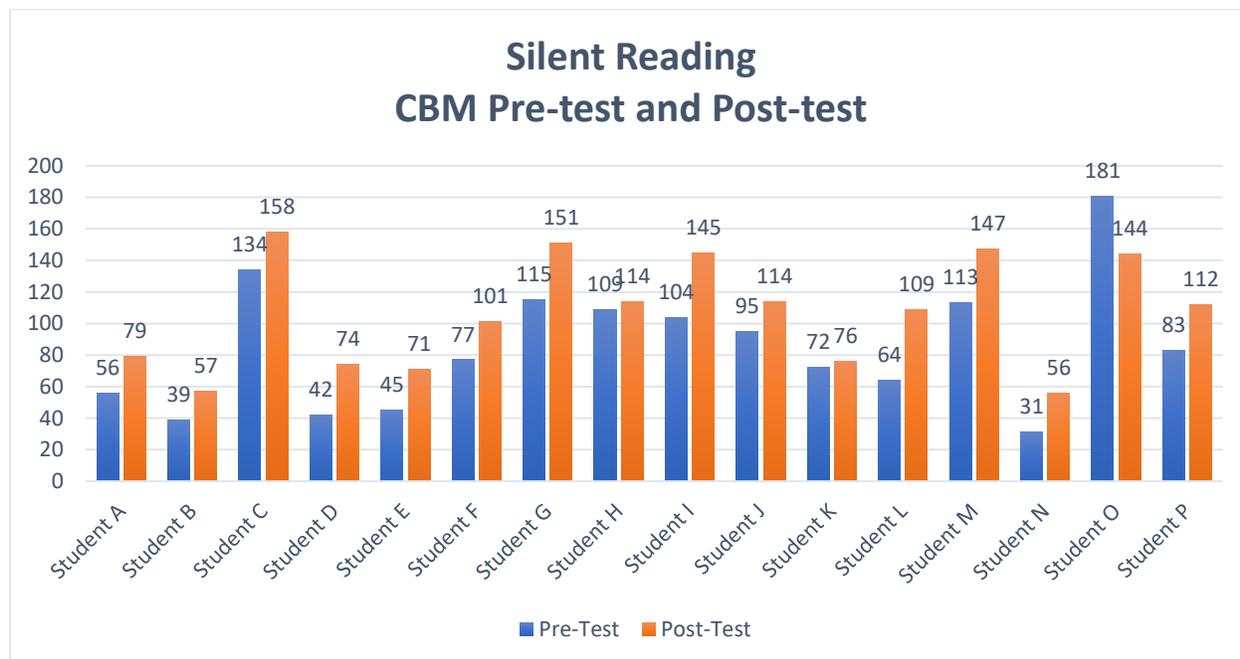
*Figure 1.* Comparison of the mean scores for the August CBM Pre-Test. This shows that the three second grade classrooms were similar in abilities for fluency.

Overall the students in the silent reading group increased their WCPM by 26%. The greatest gain was 81% by Student N who had the lowest WCPM in August. Student N was reading 31 WCPM at the pre-test in August and increased by 25 words to 56 WCPM at the post-test in October. The lowest gain was a decrease of 20% by Student O who had the highest WCPM in August in all of second grade. Student O was reading 181 WCPM at the pre-test in August and decreased by 37 words to 144 at the post-test in October. The mean increase for silent reading was 22 WCPM. Student I had the greatest increase in WCPM which was a growth of 41 words. Table 1 and Figure 2 depicts the growth of each student in the silent reading group. In total, the silent reading group had a mean score of 85 WCPM at the pre-test in August and 107 WCPM at the post-test in August which was a 22 WCPM increase (Table 1 and Figure 5).

Table 1

*Silent Reading Group*

Student	CBM Pre-test	CBM Post-test	WCPM Gained	Percentage
Student A	56	79	+23	41%
Student B	39	57	+18	46%
Student C	134	158	+24	18%
Student D	42	74	+32	76%
Student E	45	71	+26	64%
Student F	77	101	+24	31%
Student G	115	151	+36	31%
Student H	109	114	+5	5%
Student I	104	145	+41	39%
Student J	95	114	+19	20%
Student K	72	76	+4	6%
Student L	64	109	+45	70%
Student M	113	147	+34	30%
Student N	31	56	+25	81%
Student O	181	144	-37	-20%
Student P	83	112	+29	35%
Class Mean	85	107	+22	26%



*Figure 2.* Silent Reading CBM Pre-test and Post-test. This graph shows the scores of each student for their WCPM before and after the intervention.

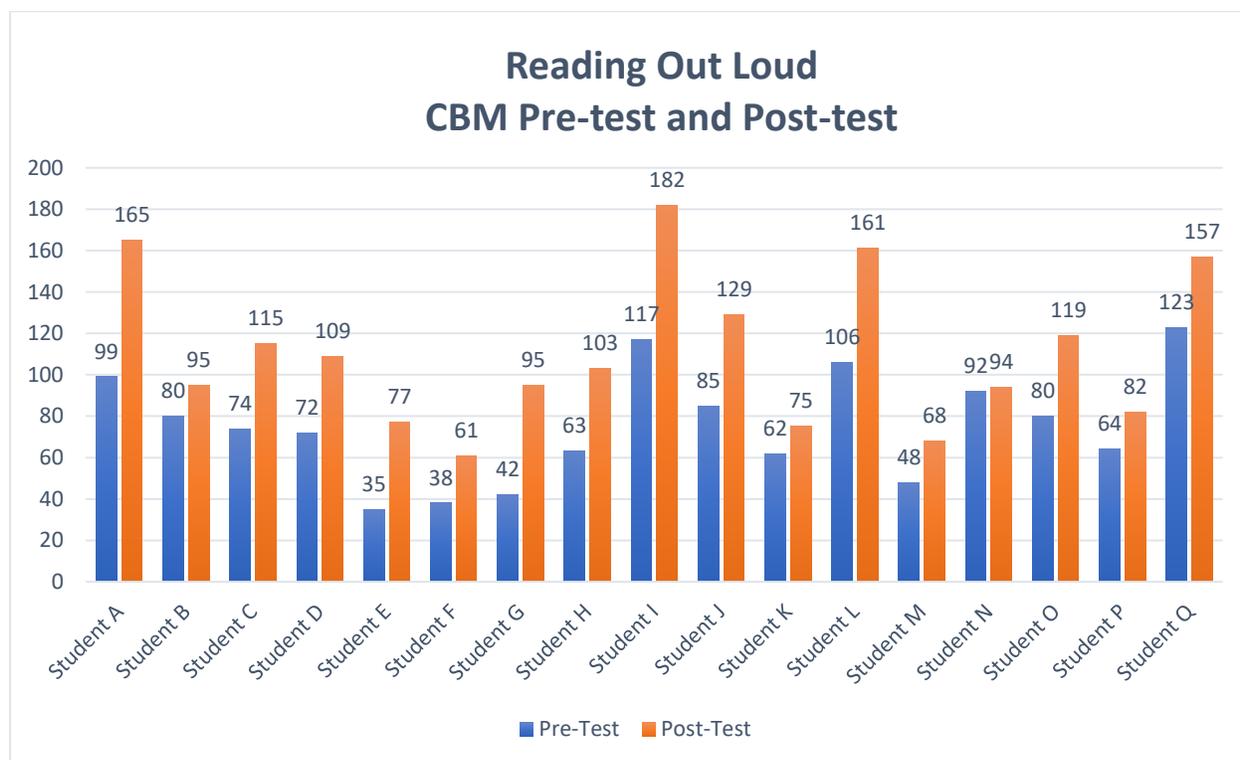
Overall the students in the reading aloud group increased their WCPM by 48%. The greatest gains were 126% by Student G and 120% by Student E who had two of the three lowest WCPM at the August pre-test. Student G was reading 42 WCPM at the pre-test in August and increased by 53 words to 95 WCPM at the post-test in October. Student E was reading 35 WCPM at the pre-test in August and increased by 42 words to 77 WCPM at the post-test in October. The lowest gain was an increase of 2% by Student N. Student N was reading 92 WCPM at the pre-test in August and increased by 2 words to 94 WCPM at the post-test in October. The mean increase for the reading aloud group was 36 WCPM. Student A had the greatest increase in WCPM which was a growth of 66 words. Table 2 and Figure 3 depicts the growth of each student in the reading aloud group. In total, the reading aloud group had a mean score of 75 WCPM at the pre-test in August and 111 WCPM at the post-test in August which was a 36

WCPM increase (Table 2 and Figure 5).

Table 2

*Reading Aloud Group*

Student	CBM Pre-test	CBM Post-test	WCPM Gained	Percentage
Student A	99	165	+66	67%
Student B	80	95	+15	19%
Student C	74	115	+41	55%
Student D	72	109	+37	51%
Student E	35	77	+42	120%
Student F	38	61	+23	61%
Student G	42	95	+53	126%
Student H	63	103	+40	63%
Student I	117	182	+65	56%
Student J	85	129	+44	52%
Student K	62	75	+13	21%
Student L	106	161	+55	52%
Student M	48	68	+20	42%
Student N	92	94	+2	2%
Student O	80	119	+39	49%
Student P	64	82	+18	28%
Student Q	123	157	+34	28%
Class Mean	75	111	+36	48%



*Figure 3.* Reading Aloud CBM Pre-test and Post-test. This graph shows the scores of each student for their WCPM before and after the intervention.

Overall the students in the video self-modeling group increased their WCPM by 33%. The greatest gain was 104% by Student P who had the lowest WCPM at the August pre-test. Student P was reading 25 WCPM at the pre-test in August and increased by 26 words to 51 WCPM at the post-test in October. The lowest gain was a decrease of 5% by Student B. Student B was reading 147 WCPM at the pre-test in August and decreased by 8 words to 139 WCPM at the post-test in October. Student B had the highest WCPM in the video self-modeling group and the second highest WCPM in all of second grade. The mean increase for the video self-modeling group was 27 WCPM. Student E had the greatest increase in WCPM which was a growth of 48

words. Table 3 and Figure 4 depicts the growth of each student in the reading aloud group. In total, the video self-modeling group had a mean score of 81 WCPM at the pre-test in August and 108 WCPM at the post-test in August which was a 27 WCPM increase (Table 2 and Figure 5).

Table 3

*Video Self-Modeling Group*

Student	CBM Pre-test	CBM Post-test	WCPM Gained	Percentage
Student A	94	117	+23	24%
Student B	147	139	-8	-5%
Student C	80	114	+34	43%
Student D	38	65	+27	71%
Student E	92	140	+48	52%
Student F	71	93	+22	31%
Student G	48	77	+29	60%
Student H	99	126	+27	27%
Student I	86	90	+4	5%
Student J	97	122	+25	26%
Student K	71	102	+31	44%
Student L	117	164	+47	40%
Student M	71	108	+37	52%
Student N	64	98	+34	53%
Student O	86	123	+37	43%
Student P	25	51	+26	104%

Student Q	83	105	+22	30%
Class Mean	81	108	+27	33%

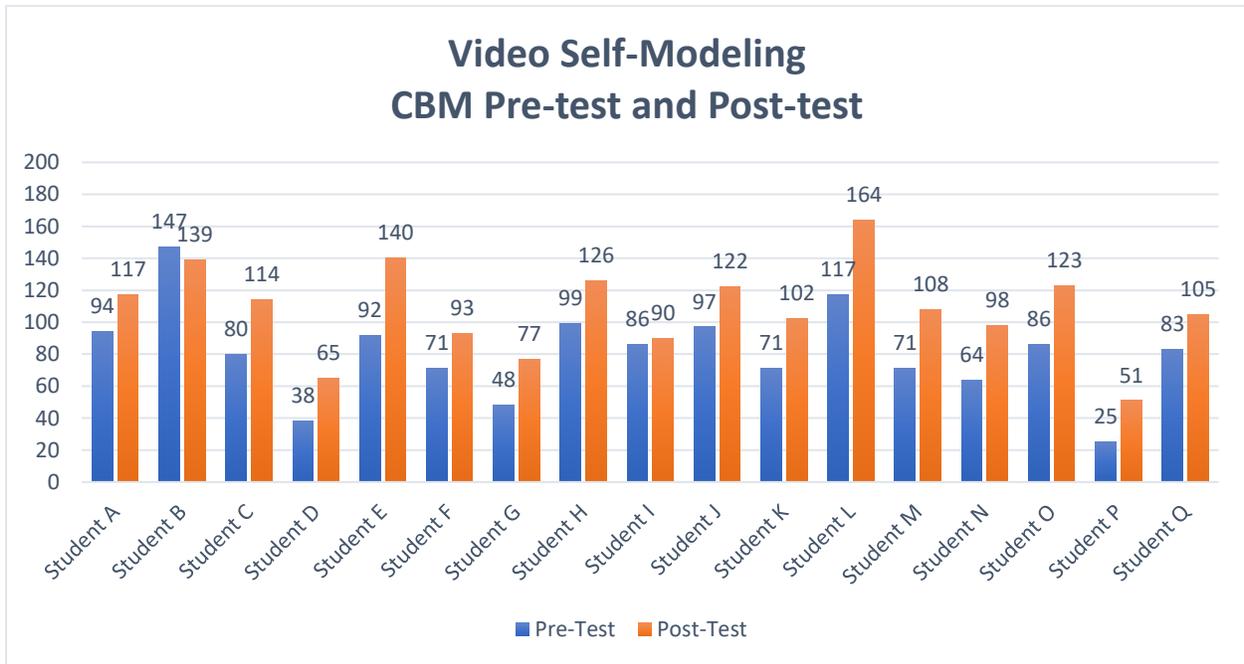
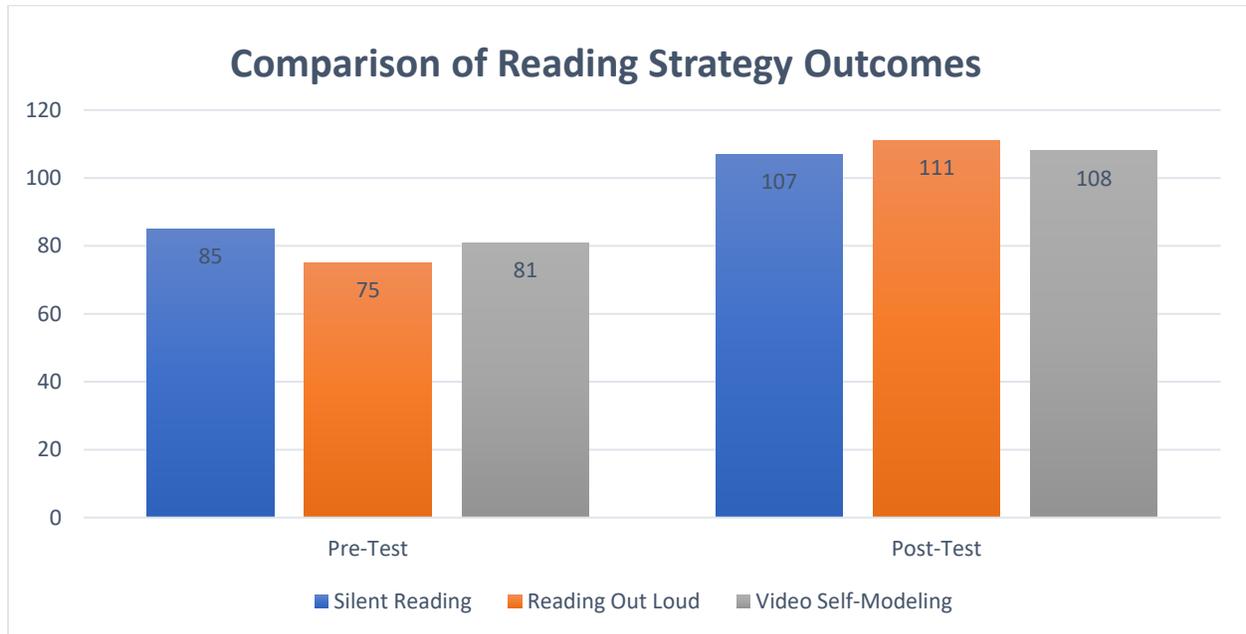


Figure 4. Video Self-Modeling CBM Pre-test and Post-test. This graph shows the scores of each student for their WCPM before and after the intervention.

Figure 5 displays the CBM pre-test and post-test scores for each strategy used. All three classes were close in range for their pre-test scores. Reading out loud started out the lowest with a mean CBM score of 75 WCPM. However, it had the highest mean CBM score for the post-test with the score of 111. Again, at the end of the action research project the three classes were close in range for their post-test scores.



*Figure 5.* Comparison of Reading Strategy Outcomes. This graph shows the mean CBM scores for the pre-test and post-test conducted.

The three students from each reading strategy who scored the lowest on their CBM pre-test were compared to the three students from each reading strategy who scored the highest on their CBM pre-test. There was a slightly bigger average increase with students who scored the lowest on the CBM pre-test. The average increase for students who had the lowest scores was 30 WCPM. The average increase for students who had the highest scores was 27 WCPM. Figure 6 and Figure 7 show the graphs for this comparison.

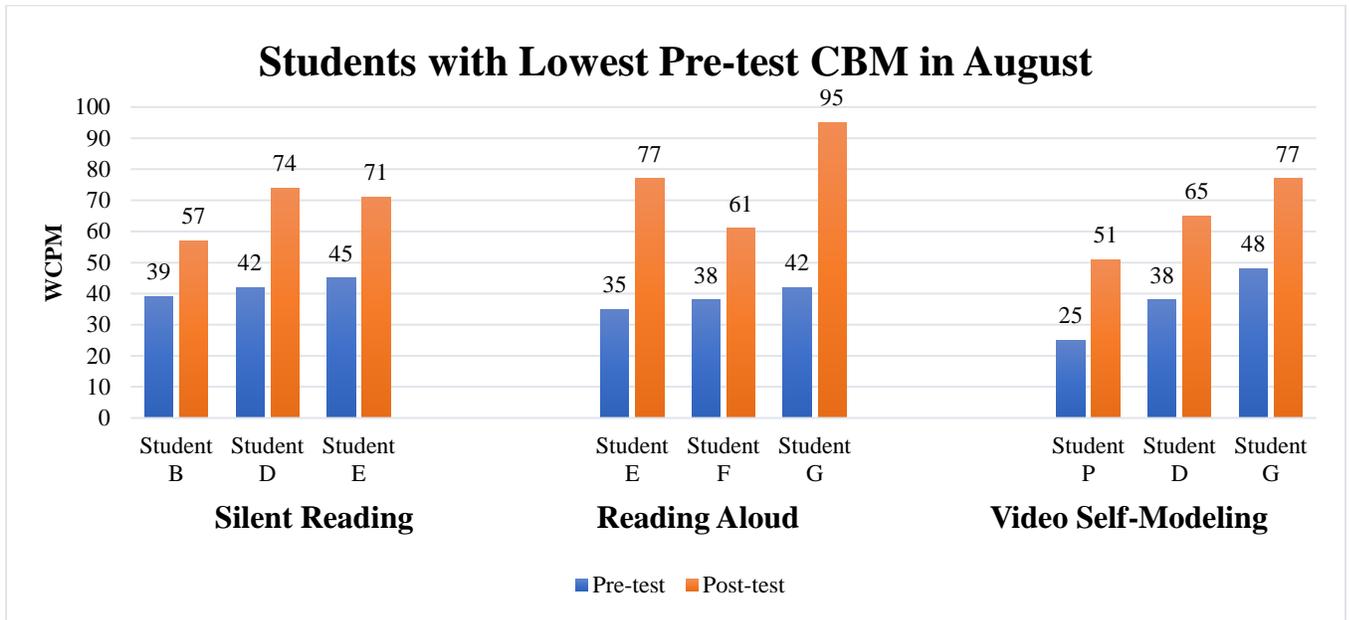


Figure 6. Comparison of Students with Lowest Pre-test CBM in August. This graph shows the scores for the pre-test and post-test conducted for the lowest students in each classroom.

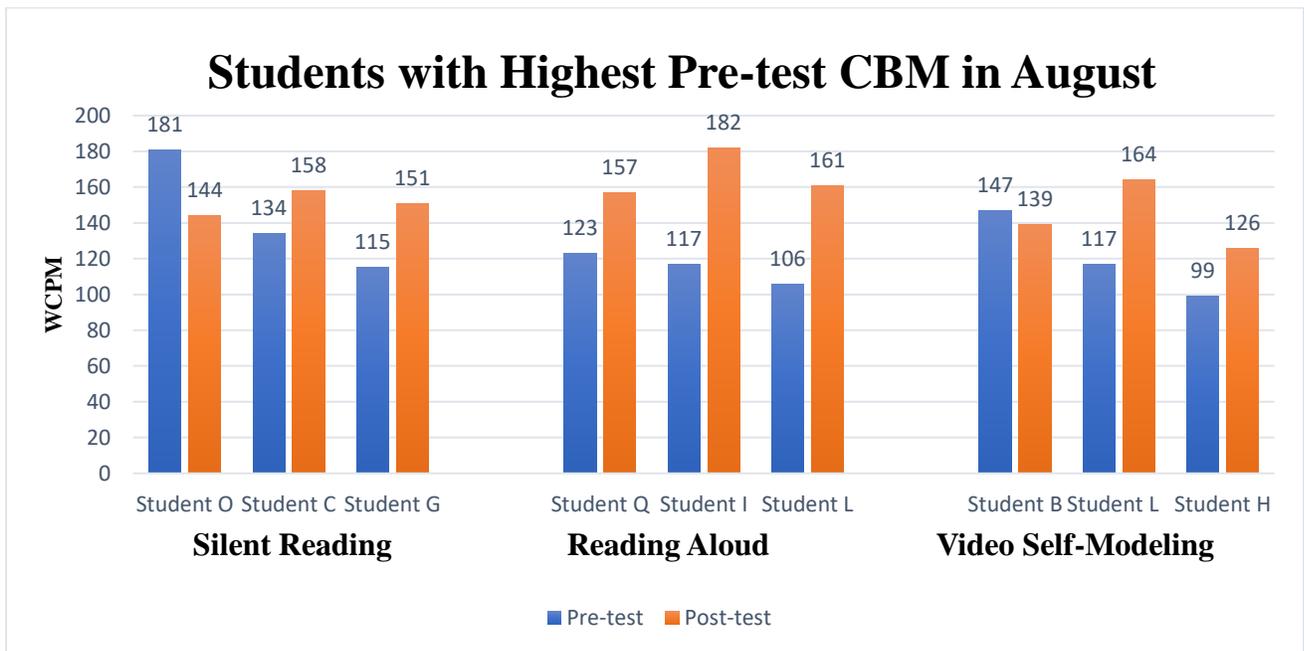


Figure 7. Comparison of Students with Highest Pre-test CBM in August. This graph shows the scores for the pre-test and post-test conducted for the highest students in each classroom.

**Qualitative data analysis.** The qualitative data collected by the three classroom teachers showed that students were on task in the video self-modeling classroom the most of the three classrooms. On average, students were on task 94% of the time in video self-modeling. Students were on task 67% of the time in reading aloud. Students were on task 74% of the time in silent reading. The teacher in the reading aloud classroom noted that the students, who were supposed to be reading aloud, tended to switch to silent reading instead. Most of the students were still reading but not using the intended strategy. This could have resulted in a lower percentage for time on task for the reading aloud classroom. After comparing the quantitative and qualitative data the researcher concluded that there was not a strong correlation between time on task and increased WCPM.

#### Percentiles of Time on Task for Fluency Strategies

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Silent Reading	%	Reading Aloud	%	Video Self-Modeling	%
Student A	97	Student A	63	Student A	100
Student B	88	Student B	85	Student B	100
Student C	88	Student C	25	Student C	99
Student D	52	Student D	84	Student D	88
Student E	44	Student E	64	Student E	100
Student F	96	Student F	58	Student F	95
Student G	92	Student G	75	Student G	96
Student H	89	Student H	84	Student H	96
Student I	79	Student I	70	Student I	97
Student J	75	Student J	91	Student J	73
Student K	54	Student K	19	Student K	99

Student L	96	Student L	60	Student L	99
Student M	75	Student M	70	Student M	90
Student N	38	Student N	83	Student N	99
Student O	91	Student O	66	Student O	85
Student P	35	Student P	53	Student P	75
Student Q	--	Student Q	82	Student Q	100
Mean	74		67		94

## Discussion

### Summary of Major Findings

All three strategies showed positive increases for WCPM between the CBM pre-test in August and CBM post-test in October. The mean scores indicate that the reading aloud strategy did have the greatest increase for WCPM. The data was run through SPSS. The Univariate Analysis of Variance test was conducted. In the end, due to not having a large enough number of participants, the researcher did not have a high enough power to indicate which strategy was the most effective. The significance was .929 and for the research to be statistically significant the significance needs to be .05 or lower.

### Limitations of the Study

One limitation that comes into this study is the amount of time it takes to use this strategy. Traditionally video self-modeling is done with the video being edited before the student watches it, to ensure they are watching themselves reading fluently at an appropriate rate. Since that was not done in this study, that may have influenced the outcome. One of the reasons the researcher chose not to edit the videos was because of the time it would take to edit 17 videos on a daily basis. The researcher also found that this strategy takes a lot of time for the students to

record themselves and listen back to it. A common problem teachers come across in the teaching profession is the limited time they have to teach and to prepare for their days. Teachers already feel a crunch for time when it comes to teaching the curriculum and meeting all the required standards. On average, it took at least 30 minutes for the students to set up their computers, complete read to self for 10 minutes, get the videos uploaded, watch 3-5 minutes of their video, and get everything put away. Is the time it takes to watch themselves worth the other things that need to be given up?

Something else that needs to be considered is if this practice is distracting because the child could get too focused on the recording instead of the reading they need to be doing or observing. This a concern the researcher has in the classroom whenever technology is a part of the process. During the researcher's observations, she came to find that some students did become distracted by seeing themselves on the computer screen. Some children made faces instead of reading or while they were reading. Other students took breaks from reading to show the computer screen the pictures in their books. Some students displayed behavior that indicated they were losing attention when watching their video for the three to five minutes. Some of the behaviors observed were talking to their neighbors, watching their classmates' screens rather than their own, and pushing on the computer screen to start and stop their video.

Another limitation of this study is the motivation and attentiveness of the students. Some students become more motivated and attentive when technology is used. Some students are not motivated when reading silently or reading alone and can have poor attitudes when asked to read silently to themselves. The teacher whose class did reading aloud, observed that many students had difficulty reading aloud to themselves for 10 minutes. The students would start reading aloud and then need prompts to continue reading aloud because they would start reading in their heads

or they would stop reading. This could be partially because they are used to reading silently when reading by themselves. It could also be due to lack of attention while reading independently. The researcher, whose class did video self-modeling, came across that problem a lot less frequently. This could be due to using technology or because the students may have felt more purpose when reading aloud since they were reading to something, instead of just themselves.

Like it was mentioned earlier, a concern the researcher had while working through this study was, “Could the student’s fluency be increasing because of recording and listening to their reading or because they are reading out loud?” If the treatment group needs to read out loud to be recorded does the control group also need to read out loud? It has been found that children’s reading and comprehension can increase when they can mumble read (Prior and Welling, 2001). That is why the researcher chose to use video self-modeling, reading aloud, and silent reading instead of just video self-modeling and reading to self. That way there was more of an assurance of a true distinction between the strategies used. However, another possible limitation based on what Prior and Welling (2001) said about how children’s reading and comprehension can increase when they can mumble read, is for the group that is required to do silent reading during this study, is it harming them to not be able to have the choice to read aloud? There were other opportunities during the school day that students could read aloud if that was their preferred way of reading.

Some have wondered why video self-modeling has not been as prevalent in educational settings if there have been positive outcomes from the studies conducted (Montgomerie, Little, and Akin-Little, 2014, p. 23). One consideration, mentioned earlier, to make is the time it takes to use the technology and to edit it to create a video for students to watch that shows them

reading at their best, since many teachers do not have the time or resources to accomplish this task (Dowrick, Kim-Rupnow, and Power, 2006, p. 205). Another consideration is that technology in the past has been a lot more challenging and slower to maneuver. However, all of that has begun to change in recent years. Buggiey (2007) states, “Thanks to the rapid development of computer and camcorder technology, creating and editing high-quality videos are becoming easier and less expensive” (156).

### **Further Study**

Further study of video self-modeling is necessary. From this study the data shows that there were increases in WCPM for fluency when using silent reading, reading aloud, and video self-modeling. Due to having smaller numbers of participants, the data was not statistically significant. In order to see the effectiveness of these interventions more studies would need to be conducted using a larger number of participants. Future studies could be conducted involving more than one school so that entire grade levels at a specific school could use the same intervention.

There are still a couple other areas of further studies that the researcher has considered. One area would be including the editing process into the video self-modeling. The researcher could contact students in higher grade levels, seek out assistance from volunteers, or hire someone who could help with the editing process for the videos. Another area of further study would be conducting more CBM tests throughout the interventions in order to collect more data. Ideally, the action research project would take place for a longer period of time with tests occurring weekly or bi-weekly.

### **Conclusion**

Fluency is one part of literacy, but it plays a very important part. If children can't read fluently, then comprehending what they read becomes even more of a struggle. This action research project explored the question, "when a child records themselves reading and listens to it, does fluency improve for early elementary children?" and looked closely at the three strategies of video self-modeling, reading aloud, and silent reading. It was a seven-week study done in three second grade classrooms, in which each classroom used a different reading strategy for 10 minutes a day during Read to Self. Even though the data wasn't statistically significant there was growth in all three classrooms. The largest growth for students' WCPM was in the reading aloud classroom, which had an average increase of 48% class wide. Video self-modeling had an average increase of 33% class wide and silent reading had an average increase of 26% class wide.

Video self-modeling did not have the highest increase of WCPM, but it did have the highest average of 94% for time on task. The researcher observed that video self-modeling seemed to be motivating and therefore most likely increased time on task among the students. Allowing students the opportunity to read is essential. Giving students a variety of ways to practice fluency is necessary since all students learn in different way. Although video self-modeling requires more time to implement the researcher plans to use this strategy in the future to assist in increasing fluency. The researcher also plans on giving it as a suggestion for parents to use because it is a good way to keep children reading in and out of the classroom.

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