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# The Use of iPads in the Literacy Learning of Students with ADHD

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The Use of iPads in the Literacy Learning of Students with ADHD

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The College at Brockport

Capstone Project

The use of iPads in the Literacy Learning of Students with ADHD was submitted to the Department of Education and Human Development of The College at Brockport, State University of New York, in partial fulfillment of the requirements for the degree of Master of Literacy Education

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### **Abstract**

This research explores literacy learning when using technological devices with students with Attention Deficit Hyperactivity Disorder (ADHD). The purpose of this research was to explore how to implement technology in the classroom more efficiently during literacy instruction. Additionally, this study explored how to make sure students with diverse needs are reached through learning when technology is integrated into instruction. Data were collected for over a period of six weeks using semi-structured interviews, observational notes, and student retelling during tutoring sessions. Data were analyzed to how technology impacts student engagement and comprehension while reading.

## **Introduction**

Visualize a student in a classroom, sitting at her desk surrounded by her classmates, while her teacher is conducting a lesson. This student is attempting to focus on the teacher without getting distracted by the pens tapping on desks, leaves falling outside, or the students passing by in the hallway. This student may be struggling to sit still and wishes that she could get up and move around, but she has already left to get a drink of water and to the bathroom to try to relieve the built up energy. The desk is cluttered, unorganized, and overflowing with papers and school supplies. Lastly, imagine this student searching for an assignment that was due that day, while realizing she forgot to study for a test she was about to take. Consider how this student may feel as she struggles to sit at her desk, keep her focus on the teacher, and stay organized with her materials, all while staying on top of her due dates. While this student might feel this way at school, these feelings can continue when they get home as well.

I previously worked with students who have gone through some of these experiences. Through these experiences, I have developed an interest in students with Attention Deficit Hyperactivity Disorder (ADHD), and how the effects of ADHD, being unfocused, unorganized, and not being able to sit still, impact the student's learning in the classroom and with assignments at home. I believe effective support and practices can help some students with Attention Deficit Hyperactivity Disorder in the classroom and home setting.

## **Topic**

Many students with ADHD diagnoses are known to experience academic difficulties and may display disruptive behavior while the class is trying to engage in lessons and activities throughout the day (Gwernan-Jones, 2015). Often students just need a break or need to be taught

in a different way than others, in order to learn and obtain information. ADHD only affects so many students, “It is a lifelong neurobiologically-based developmental disability, which estimated to affect 2-9.5% of the school age population”(Solomonidou, Garagouni-Areou, & Zafiropoulou, 2004, p. 110). While some students have been diagnosed and prescribed medication to help this disorder, others have yet to be diagnosed and try to find that focus and calmness in certain situations that may happen throughout the day.

A device may help focus the student more often, but also showed an increase in metacognitive in their reading (McClanahan, Williams, Kennedy, & Tate, 2012). McClanahan’s (2012) study included students with ADHD that showed breakthroughs with literacy instruction incorporating technology. One use for technology is to provide access to enhanced, interactive textbooks (McClanahan et al., 2012). I believe it is important to conduct a study that includes a student with ADHD because we as teachers need to continue our practice by differentiating techniques that can be used in the classroom and continue support at home with the diverse needs of our students, such as students with ADHD. The ADHD population of students is prevalent in 8% to 20% of community samples worldwide (Zentall & Lee, 2012, p. 249). While the population of ADHD students is continually increasing, it is important to see what affects these students’ literacy learning, and on the other end of the spectrum, what may support them through specific instruction with the use of technology.

The quality and quantity of technological devices used in the classroom continually increases, but students are showing more positive attitude while using the iPad in their learning (Lemai, 2015). Technology and the use of iPads have been gaining popularity for personal reading (Jones & Brown, 2011). I have observed students more focused and interacting more often with text while using technology. Along with iPads, laptops and desktops are still being

used for literacy instruction. Various types of technology have shown positive effect on students and their reading (Howard & Wallace, 2016). I have witnessed students becoming more engaged in reading while using an iPad, especially when they can adjust the size of the font or the brightness of the screen to read more comfortably. It is important to understand what technology can do in the classroom and when it comes to students' literacy instruction, especially with students who may need accommodations or extra support. Technology may engage students in a unique way and children can learn literacy behaviors through active engagement (Howard & Wallace, 2016). The overall topic of this study explores the idea of how the impact of technology may influence the behaviors of students with ADHD.

### **Rationale**

From when I began my teaching experiences pursuing my undergraduate degree, to being employed as a substitute teacher and continuing my education in graduate school, I have noticed slight changes in literacy instruction. As time went on, I observed teachers using books with paper and pencils a little bit less. Instead, I noticed the growth in technology devices in each classroom, where students used them for some subjects during specific times. One may notice a sudden change with some instruction or activities where the students were instructed to only use a device. Educators are life long learners that are able to implement different practices with different strategies in each content area. Other studies have noticed the increase of devices in education settings, "Many education service providers have started exploring how to use iPads for teaching and learning in this ever-changing digital mobile learning world" (Nguyen, Barton, & Nguyen, 2015, p. 191). Devices and new literacy programs on these devices seem to continue to filter into classroom instruction. There may be requirements in several districts where it is recommended to use a specific device and include it in every day instruction.

For teachers, there is always room to learn and become more educated with newly formed classroom practices. There can be several positives to incorporating different instruction into the classroom, specifically technology. Technology may be able to incorporate instruction that benefits to students while learning in the classroom and continuing at home. With the use of technology, “children can be more motivated and interested as well as increase persistence and engagement with traditional tasks” (Lee & Vail, 2005, p. 6). These benefits may support learners during specific literacy instruction with different literacy skills. The results may be able to tell administrators and teachers if the use of technology is effective through literacy learning. With the results of my analyzed data, teachers may be able to modify instruction better to fit students needs and support them appropriately. This study will help teachers understand how technology and specific programs used on devices, like an iPad, will help our students excel and improve with their literacy practices. One study describes the use of technology with literacy learning as, “Children’s literacy practices are shifting and colliding with each other in complex, adaptive, and interconnected ways” (Laidlaw & Wong, 2016, p. 31). Since their literacy practices are changing because of the increased amount from the use of technology, it is appropriate to see if what is being incorporated into the classroom is an efficient use of time for student learning.

I believe it is important to keep up with these advances to be able to give our students the best classroom and learning experiences. There is always a new way to try to connect and engage with a student, especially with those who seem to struggle with certain literacy practices. This study is important to see a student’s perspective, so that teachers can evaluate what is working and continue to notice what is not meeting the expectations to support our learners.

## **Purpose**

It is easy to get a little distracted in the world of technology and all it has to offer because of how much it is used in our everyday lives. Through my personal observations, I have noticed first hand an increasing amount of technology in the classroom. There has been a growth in using devices such as iPads, EBooks, and laptop computers in the educational setting. Students seem to have a familiar grasp on various technology devices that they have used at home or in the classroom. While students may not be using their devices at home for any type of instruction, they are still being exposed and learning several ways on how the technology can be used. In my experiences, I have seen teachers implement technology into various subjects to allow students to listen to books online or have interactive activities to enhance literacy skills, like decoding. Different devices have different characteristics that can be implemented into literacy learning. EBooks can be efficient by allowing the reader to add personal notes, research unfamiliar words, or even highlight important ideas in the text (Union, Union, & Green, 2015). The growth of student knowledge has increased drastically over the years because of the use of devices in the classroom.

Technology is continually being added into the classroom and the use of devices, like an iPad, have been recommended to be used for specific content areas. Teachers need to be cautious of how much technology is used and incorporated into the classroom and instruction (Lentz, 2014). While technology can be used for several subjects, it should never replace the traditional teaching methods that has been successful. Instead the teacher should look to enhance the experience for students with the use of technology. While technology can add several supports during instruction, it is important to investigate if technology is supporting students with specific needs. Students are all unique learners who learn best in different ways. This study may help

notice what features on devices are most effective when students are focused on literacy instruction.

Schools are continually looking for one device that will fulfill the purpose of required technology use in the classroom. One device specifically that I have seen in most classrooms and that children are using is the iPad. The iPad has become popular due to its comfortable size and weight, touch screen, Wi-Fi data connection and a plethora of affordable applications that can be easily downloaded (McClanahan, 2012). The implementation of the iPad in the classroom can support students with engagement and motivation because of the unique qualities it brings.

In this study, I explore the comparison of reading and comprehension with a traditional text to EBooks on the device of an iPad. I am focusing on how technology could influence students while reading with the features that it contains. Also, to see if these features are being implemented appropriately and not changing the way students learn literacy. Walsh and Simpson (2014) state, “One issue that concerns literacy researchers is whether the physical action of touch changes the way learners process onscreen information and in what way such action affects students’ thinking and literacy learning” (p. 96). With the growth of devices in the classroom, changes and the process of student learning may be altered. Even though I studied a student in a tutoring environment, the data collected about technology and what supports are informative to teachers in the classroom setting. This study helped me to understand what literacy programs are effective and if the features on iPads can be used in literacy practices successfully. Additionally, this study has informed my practice by implementing technology into the classroom more efficiently towards specific students’ needs, like students with ADHD.

## **Research Questions**

Students are gaining a variety of experiences and opportunities to practice their literacy skills. To go along with these new experiences, teachers have been using technology to better reach students with ADHD. These literacy programs provide teachers with an alternative way to implement literacy instruction to their students. During my research, I observed an intermediate age student with ADHD about the use and experiences of technology to promote literacy learning in hopes to answer the following questions:

1. How is a student with ADHD impacted by the use of technology?
2. How does technology influence the reading comprehension of a student with ADHD?
3. What are the reported thoughts and reactions of a student with ADHD towards technology and reading instruction?

## **Literature Review**

The following literature review summarizes main points about students with Attention Deficit Hyperactivity Disorder (ADHD), reading comprehension, and how the use of technology in the classroom promotes reading improvement. The following research provides background information about ADHD. Additionally, my study explores how some students who have been diagnosed with ADHD may feel in regards to reading. This paper also explores students' literacy skill of comprehending text. This literature review also examines the use of technology for literacy instruction and how it may influence students in the classroom and at home. My study was conducted at the participant's home in a tutoring situation.

### **Attention Deficit Hyperactivity Disorder (ADHD)**

Attention Deficit Hyperactivity Disorder (ADHD), is known to have a pattern of behaviors that include inattention, hyperactivity and impulsivity. Zoromski (2015), defines ADHD as, “The current diagnostic criteria for ADHD require the presence of developmentally-inappropriate levels of inattention and/or hyperactivity/impulsivity, and symptom-related impairment” (Zoromski, 2015, p. 1243). Some children are working towards being able comprehend and notice specific details, continue to work on organization skills, and try to persevere through remaining seated for periods of time (Hill & Turner, 2016). I focused on and observed reading comprehension and focus through out the duration of my study with my participant.

**ADHD and reading comprehension.** Diagnoses referring to ADHD are relatively common. An estimated 5.9 to 7.1 percent of the population worldwide are affected by ADHD (Hill & Turner, 2016). There can be many symptoms associated with ADHD that affect students in the classroom and at school. These symptoms can vary in different age groups and differ if they are at home or at school. Some behaviors, like being unable to stay focused, can continue because of the environment they are in, while others will change with age and experiences a person may be associated with (Zoromski et al., 2015). Students bring their own diverse and unique characteristics to the classroom. Just like students in the classroom, students with ADHD may have a set of diverse symptoms that might differ with someone else that has ADHD. Symptoms that students with ADHD may have vary when they are trying to stay focused, for example, staying concentrated while they are reading. Zentel (2012), explains how some students may have problems remaining focused while reading:

Students with ADHD, without co-occurring disabilities, can have reading comprehension difficulties when they must recall causal connections (A leads to B) and when reading passages that are long or with interruptions in the story sequence (e.g., excessive description, interrupted story coherence) (p. 249).

Zentell's study highlights the importance on how comprehension plays a crucial role in reading instruction. If students cannot comprehend what they are reading, they are unable to understand what they are reading (Zentell, 2012). Students read throughout their educational career to gain knowledge of concepts and objects. Being able to read, but not comprehend, affects students' overall progress in the classroom and how they learn. The ending goal for comprehension is for students to be able to transfer their understandings when reading to learn and to include multiple levels of analysis and synthesis.

**Comprehension and technology.** There have been studies (McClanahan, 2012; Aydemir, 2012; Hess, 2014; Howard, 2016), where technology is implemented within the classroom and has shown to have an influence on students with ADHD and their learning process. The use of technology is continually being implemented in the classroom and changing the usual ways of instruction. Hess (2014), states, "The infusion of technology in American society has caused rapid changes in educational environments" (pg. 35). It is important to realize the impact technology may have on students and their learning. Hess' (2014), study confirms the growth of technology in students' lives and helps my study understand how my participant might feel with changes of literacy instruction. McClanahan (2012), conducted a study where she used an iPad for most of her instruction when working with a student with ADHD. McClanahan (2012) stated, "The device not only helped the student focus attention, it facilitated his becoming much more metacognitive in his reading" (p. 20). McClanahan's work gives great insight to what

changes in instruction can be made with technology and how it affects a child with motivation and focus. McClanahan (2012), explains that technology, like the iPad, provides enhanced, interactive textbook access to the student. It is important to remember that in any classroom, technology is there to enhance the experience of learning. Technology should not replace traditional teaching instruction and practices.

When instructing struggling readers, I believe in shaping individualized plans for the entire classroom to better reach all students specifically in literary education. Mass changes in instruction can be a good, but finding successful ways to reach the class and students is key. Sometimes incorporating technology into every day instruction does not go as planned. Hess (2014) shares, “Although popular for some time now, integrating ever changing technology and new literacies into the classroom still seems to be a challenge” (Hess, 2014, pg. 35). These challenges do not need to exist if the use of the right programs and right features are found and assigned to each student to help them improve their literacy skills. This idea of incorporating technology into student’s lives and it turning into a challenge helped focus my study on the support of the programs that are being used and if they are being used effectively.

Most of the time, an individual approach will be a better tactic when trying to reach an entire group and keep the classroom progressing at an even level. This is the foundation of my study; I introduced my participant to different types of programs to see how she responded. To incorporate new approaches in literacy learning is a valid plan, even if the initial response and result does not go as planned. New approaches may have more success than using the same type of instruction and not seeing any results in the student’s progress. These understandings of comprehension and comprehension with the use of technology, influenced my study by focusing

on how a student comprehends and what is the best way for a student to comprehend with the tools and features given.

### **Reading Motivation and Improvement**

In the classroom, reading is not only part of literacy instruction. Students read to learn in all content areas and use reading as a way to understand different concepts and ideas. According to Aydemir and Ozturk (2012), “Reading is a complex skill that requires the coordination of several relevant sources of information and meaning construction from the text. Reading affects people of all ages and enables them to improve their thinking, understand social events, and enter a healthy process of communication” (p. 357). Even if children cannot read yet, they not be aware of certain literacy experiences even though they are engaging in them.

Reading is much more than reading a book and understanding a story or idea. Reading and literacy allows everyone to communicate with one another by expressing thoughts, feelings, and ideas. Aydemir & Öztürk (2012), state, “The main goal of reading instruction in elementary education is to equip children with the skills of using the language of writing and drawing effectively for communication purposes”(Aydemir & Öztürk, 2012, p. 357). The skills learned in literacy learning allow for students to become life long learners as they participate in future experiences.

**Student motivation.** In the classroom, students have to obtain important ideas when reading. Motivation is a crucial part of reading that students need to be successful. In the past, I observed in my field experiences placements how motivation can affect a student’s progress and how their work may look differently. A few studies, (Aydemir 2012; Hess, 2014; Zentall, 2012), share examples of what they believe motivation is, “It has been defined as a stimulus that

triggers purposeful behaviors and intentions, willingness and a desire to reach a goal, the degree of people's efforts and their choices, and fuel for the tools that people use for learning and information" (Aydemir & Öztürk, 2012, p. 358). We as teachers need to find what motivates each student so that they can do their very best and show progress through the school year. To find motivation and engagement in literacy instruction is important because, "The level and amount of time that a child spends engaged in literacy activities is an accurate predictor of his or her motivation to read including gains in reading achievement" (Jones, 2011, pg. 5). This idea of student motivation is important to my study because of the huge role it plays in with literacy learning. A student that is motivated in class will have a different learning experience during literacy instruction and allow for progress with the supports of technology devices.

Of course, motivation will come differently for each student. Some may already be quite motivated or they have found what motivates them on their own or through other experiences. Others might struggle to have motivation to continue to read and practice their reading strategies if they are not engaged effectively. When motivation is lost, the teacher can find strategies and different ways to find that motivation for the student.

### **Technology and Reading**

Students learn at the best rate when fully engaged in what they are reading and writing (Howard 2016). Researchers and educators have been exploring what exactly engages students, and how they can keep them engaged. One tool in the classroom that has been continually making its way into lessons is the use of technology devices. Technology has been incorporated more frequently into classrooms and into classroom instruction as the years go on. Technology has given us new insights of our daily lives and how we communicate. Aydemir & Öztürk

(2012) stated, “In recent years, technological advances and the spread of the internet have made it possible to share readings or obtain information via the computer, telephone, and TV” ( p. 357). Technology has been and is continually becoming a new resource for students in the classroom to explore their learning for each content of study.

New devices, applications, and different uses of both are being introduced and students are being exposed more than ever to this new world of technology. Many studies, (Aydemir & Öztürk, 2012; Hess, 2014; Howard, 2016; Jones, 2011; McClanahan, 2012; Mikelić 2016; Union, 2014), have researched the use of technology and how it has affected kids in the classroom and outside of the classroom. Students today are growing up drastically different than their parents and grandparents because of increase of technology usage (Aydemir & Öztürk, 2012). They also state, “They mature with the internet and many instant communication devices that could not be imagined 20 years ago” (Aydemir & Öztürk, 2012, p. 357). Once students get into grade school, they are exposed to many devices that will lead some classroom instruction in all content areas.

**Devices.** Additionally, studies have researched how the use of technology devices at home affect both the student and the parents with their education. Some studies only looked at specific devices to see the reaction with the students and their learning. McClanahan (2012), focused mostly on eReaders instead of the traditional print-based textbook. “It was reported students using an eReader, specifically the Kindle, to read eBooks in the classroom. In the study, using the Kindle resulted in improved engagement with text and deeper comprehension” (McClanahan et al., 2012, p. 21). This is one example that shows how technology can have a positive affect on our growing readers. McClanahan (2012), found that the use of these devices and the specific tools that were involved with the device had impacted students while reading.

Students were found to be more motivated to read, which led students to read more frequently and showed the growth in their stamina while reading. McClanahan (2012) also shared why they did favor the devices for a variety of reasons, “They were able to change font size, write notes in the text using a keyboard and utilize an audio-enhanced dictionary” (McClanahan et al., 2012, p. 21). McClanahan (2012), also found that students were able to hold the device in a more comfortable way and were able to move around the classroom and work where they are most comfortable (McClanahan et al., 2012, p. 21). When reading books on an app on a device, it is a new and unusual experience than when they are reading a usual text book. The devices, for example, an iPad, allow for these unique features. The iPad allows for change in the classroom, differentiate learning processes, promote seamless learning, and allow for students to provide evidence of their own learning of new technological devices with literacy (Zammit, 2016). The iPad has introduced the classroom to new learning and teaching features to impact literacy instruction for all types of learners.

**Tools on devices.** There are several tools on the device that can enhance the learning for students and support for a variety of needs. McClanahan (2012), continued to have other positive feedback, which included, “Commercially developed programs, eBooks often with text-to-speech, and computerized learning games all have research to document their varying degrees of effectiveness”(McClanahan et al., 2012, p. 21). All devices bring diverse tools that students can use while they are reading. The tools allow for student’s motivation to increase and the progress becomes noticeable. With the use of devices, like the iPad, students are responsible and more in control of their own learning (Zammit, 2016). Teachers and students need to find the correct device that will support students the most and with the right tools to be used most efficient.

**Importance of technology.** With technology growing in school and in students’ homes

so quickly, it is important to remember what we started using it for in the first place. Technology is meant to enrich our classrooms with new experiences for the students. Union (2014), states, this development will inevitably include using new technologies, trying out new concepts, imposing new strategies, and planning for the unexpected in the twenty-first-century classroom (p. 21). For our students, it was meant to be extra support and extra practice that students could become engaged in for their literacy skills. Technology allows for a different type of activity to be used in the classroom where they can continue to practice their literacy skills. Aydemir and Ozturk (2012), share, “These technological changes point to a change in literacy from paper to the screen. Thus it is important to understand the role that digital technologies play in the education of current and future generations” (p. 357). Aydemir and Ozturk (2012), state that it is important to keep in mind the role of technology and why we are using it for instruction. I have learned through this research that technology should not be used to replace the traditional texts or in class activities that are used for literacy instruction, but to enhance instruction and to differentiate it for students in the classroom. The use of technology allows for more active learners through this type of interactive learning and creates memorable learning experiences for students (Tyrrell, 2017). Technology is a great way for students to gain experiences and to express their learning in a more unique way.

## **Conclusion**

Several studies have shown research that has been incorporated with the topic of students with ADHD, student’s reading and comprehension, and how students have implemented technology in the classroom and home setting. Some studies showed positive effects of technology when incorporated into literacy instruction with diverse students that may contain students with ADHD. There are guidelines to follow when planning and finding what works. The

use of technology, for example an iPad, may change the way a student with ADHD reads and comprehends the text presented to them. This literature provides different perspectives of how technology can be used at home or in the classroom with students with ADHD. The literature shared provides information of reading comprehension and how technology, like the use of an iPad, may influence a reader with ADHD differently than traditional books. The literature noted in this study favors the use of technology in the classroom and states that the use of devices, like an iPad, is a viable choice and essential for literacy instruction (Union, 2015).

### **Methodology**

For my project, I worked with an eleven-year-old girl who was diagnosed with ADHD. This research study was conducted at her home after school for several tutoring sessions. She loved to read, but sometimes struggled with reading and completing her reading homework. The purpose of this study was to explore traditional texts and the use of technology, like an iPad, to see if there are features that distract the student during reading and if there are supports from different features while reading for each. With these distractions and supports, comprehension will be measured. Ochoa (2016) states, “the reading comprehension abilities are necessary to acquire knowledge and learning of new information” (p. 655). Since comprehension is crucial when reading to learn, understanding what helps a student comprehend best and how was important. I used an iPad as the technology device to use EBooks to see if they can improve learning. I also used print based texts to compare the data between physical books and text on an iPad. I recorded when she verbally retold the story after reading, wrote down observations, and conducted an initial and closing interview with the student. The next section shares how I collected data to investigate my research questions.

## **Participant**

I conducted my research with an 11-year-old girl who was diagnosed with ADHD and who was in the fifth grade at the time of this study. In this study, I will refer to my participant as Elizabeth. (all names in this study are pseudonyms). I have been friends with her parents for several years. After getting to know Elizabeth, I have learned that she is out-going and always excited to learn new things. She is bright and loves to read. I wanted to learn what programs and apps, like RAZ kids, are used on the technology devices at school and at home that will help support her to stay engaged and focus on literacy instruction and activities.

## **Setting**

The setting took place at the participant's home. Elizabeth lives in a rural community located in Flynn (pseudonym), NY. It is a low populated town with scattered neighborhoods through out the rural location. Elizabeth lived with her Mom, Step-Dad, and Brother in a townhome community. The participant reported that she preferred working in the kitchen, at the dining room table, because this was where she always completes her homework. Lastly, this study included using an iPad during the tutoring sessions that supported Elizabeth's literacy learning.

## **Positionality**

At the time of this study I was a student working towards my M.Ed in Literacy B-12 at The College at Brockport. Previously, I have graduated from The College at Brockport with B.S. in Health Science and have completed my certification for Childhood Education 1-6 and Students with Disabilities. I currently work as a District Substitute for a local School District, which allows me to work every day in a variety of classrooms and in several positions. This

position allows for a variety of experiences in diverse settings with multiple groups of students. I am in different classrooms frequently through out the week. I am able to see the different strategies and programs teachers are using to instruct and support the students in the classroom. While I am not there long enough to see the long-term effect, I see the initial interaction between the program and the student. This interaction allows myself to see early actions from the student including engagement and motivation that may take place. This initial interaction is what I witnessed during my sessions with Elizabeth. The prior experiences in the classroom allowed me to compare past experiences with what I saw during this study.

### **Methods of Data Collection**

This project is a qualitative study (Clark and Creswell 2015). I collected data by using a semi-structured interview, observation chart and retelling chart to record my findings. I met with my participant during six sessions. These sessions would take place after school and would last from 30 to 45 minutes. My participant completed a semi-structured interview during the first and the last sessions. The participant would read a text from a traditional book and then read the same book from a digital copy on the iPad. I would record observation notes about her reading behavior when reading from both. After she was done reading, I would ask her to retell what she read. This is where I recorded the retelling notes and check for accuracy with her comprehension. I chose texts at her independent reading level reported by Fountas and Pinnell's benchmark reading program (Fountas & Pinnell, 2016). According to Fountas and Pinnell, fifth grade students should be reading at a level S-W. Her parents shared with me that she was at a level U for her independent reading level.

**Semi-structured interviews.** When I met with my participant for the first time, I was able to learn about the student from her own perspective. During the first session, I started with a semi-structured interview asking several questions about how the student felt about reading, how she felt using an iPad, and her overall experiences with technology. I also asked about how reading has been at home and in the classroom. This allowed me to get to know what the student has already experienced and how much knowledge they have about technology and reading programs. I was able to learn a lot about the student and her overall motivation and feelings when it came to reading.

**Observations.** While the student was participating in my study, I had an observation sheet, where I would write down anything I noticed about her behavior wise while reading from both the traditional book and the iPad. I was looking for anything that may have distracted her while reading, which included, her body language, facial expressions, any movement, etc. I completed a section of my observation chart when she read from the book and then when she read from the iPad. I used this observation chart for each session.

**Retelling.** Additionally, I used another chart to record details about her retelling of the section of the story read to check for comprehension. She retold a section of the story twice, once after reading from the book and second when she read off of the iPad. Later, I would check the accuracy of her comprehension from the notes I had written when she gave me details about what happened in the story.

## **Procedure**

This study explores reading instruction with the use of traditional texts and technology. This study explores the influence reading comprehension and learning of students with Attention

Deficit Hyperactivity Disorder when comparing both traditional texts and an iPad. My goal was to see how the use of technology can impact a student's literacy instruction, and whether it supports with comprehension or improve literacy understandings of students with ADHD. I used a reading program, RAZ Kids that is located on the iPad and laptop to make observations about the student and their reading behavior.

This study was conducted from late December 2016 to February 2017 during a six-week period. I met with my participant at least once a week for a half hour to an hour. I scheduled six sessions with this student through out my data collection. At these sessions, I had Elizabeth read from a traditional text at first. While she was reading, I collected any observations, for example, any types of movements or distractions that may have occurred during that duration. After she had completed the section I asked her to read, I asked her to complete a retell of what she had read from that section. While she explained her retell, I continued to write down observation notes and what information she was sharing with me to check her comprehension of the reading. Once this was finished, I asked her to continue to read the same book resuming at the same point, but on the iPad instead, where I had a digital copy already downloaded. Again, we repeated the process of her reading a section, myself taking observation notes, and the student retelling the story, while I completed taking notes to check for her comprehension. I continued each session with the same procedure. The only change made was the title and genre of the book provided for her. At the conclusion of the study, I gave my participant another semi-structured interview that was similar to the initial semi-structured interview given because I wanted to see if her ideas changed about literacy and reading after reading with the use of the device of an iPad. I added more questions to the second questionnaire about how she felt about using the iPad compared to the traditional text and if she liked or disliked the iPad and why.

## **Trustworthiness**

The design of my study meets criteria for trustworthiness. I observed my participant several times over an extended amount of times to ensure data was collected during multiple observation times. I used triangulation in my study by collecting data sources by using several types of data. My data was collected by observation notes, retelling notes, and two semi-structured interviews (Clark, & Creswell, 2015). Additionally, I worked to ensure an ethical study by following the protocols set forth by the IRB.

## **Data Analysis**

Data was collected to answer the following research questions; (A) How is a student with ADHD impacted by the use of technology? (B) How does technology influence the reading comprehension of a student with ADHD? (C) What are the reported feelings of a student with ADHD towards technology and reading instruction? When referring back to the focus of my research questions, my findings included, the impact of iPads with reading comprehension, how iPad features effect students engagement while reading, and how the iPad supports diverse needs compared to a traditional text. I used observations, comprehension recording tool, and semi-structured interviews that I coded appropriately to conclude my findings. I coded by searching my data for patterns of my participant's feelings, perspectives, context, behaviors and language (Clark & Creswell, 2015). Clark & Creswell (2015) also share, "With some qualitative projects, researchers start with specific topics of interests, and they use these topics as codes to identify the data that relates to those topics" (pg. 359). After conducting observations, I found my participant's interest in the devices features or lack of and how my participant is using them

while reading. I have coded in this manner, which resulted in the findings detailed in this section.

### **Finding 1: iPads have an Impact with Reading Comprehension**

Students read for a purpose. Students are either reading to learn or reading for pleasure. No matter the reason, students need to be able to comprehend what they are reading to learn about different ideas, to be able to transfer their learning to other learning experiences and to be able to enjoy texts. Sackstein (2015), states, “Generally accepted that reading starts with identifying words, moves to integrating and interpreting these, and then to comprehension that takes place at the end of sentences (pg.2). The skill of comprehending is crucial to be able to transfer what students have learned from reading. iPads have different features that may be able to support students with the skill of comprehending. Features on an iPad may vary for the type of support a specific student may need. Some features allowed for the participant in this study to demonstrate her comprehension.

Elizabeth, the participant in this study, seemed to be able to comprehend the text more clearly after reading from the iPad than from a traditional book. For this finding, I coded by marking notes about her behavior when using the iPad. I also checked the accuracy of her comprehension from the notes on the retell form. For every session that she used the iPad to read, she continued a pattern of using specific tools located on the iPad on the EBook. When asking her to retell what she previously read, she was able to share with me what she had comprehended and understood about the story in the form of an EBook. She was able to give specific details and even shared about a new word she had learned that she found in the text. She shared that the word “surcharge” was used in the text, and the story gave her a definition of what

that word meant. She had used the highlighting tool and highlighted this word and definition in the text on the iPad. When using the iPad, she was so focused on reading and using the tools presented to her. She did not get distracted or notice much going on around her. Together, we were able to have a full conversation about the book. She would relate some of the book to her own life. She shared about the characters in the book and how they seemed different when comparing them to the people she knows in her own life. When quoting about the book, *Surviving the Applewhites*, Elizabeth shared, “The high school that these students go to seem different and the kids in this book do not seem to follow the rules and listen to their parents.” I prompted her to expand her ideas on what she was relating to in the story and how the story made her feel when reading it. She shared more about the story and parts that expanded her thinking. Elizabeth explained, “Maybe they do not like to follow the rules because they are mad that they have to move away from their old school and friends. I have never moved away from my school, but I could see that being hard.” Some parts that she comprehended allowed her to come up with questions or some things she was still wondering about from the story.

**Tools and features.** Overall, there are many features that can be used on an iPad. When looking at EBooks, specifically on an iPad, readers can find and learn how to use various tools to support their reading skills and strategies. These tools can also enhance the experience of reading on a device. McClanahan (2012), found similar details when using an iPad with a student. McClanahan (2012), study showed the student engaging with the font size, highlighting, and the use of a dictionary online. This concept was similar to Elizabeth and her actions after I gave her instructions and what was expected. I gave her the iPad and allowed for her to change anything about the EBook that she wanted. Her use of the different tools and features showed me what different supports she may need and what tools and features she would use or change.

At first, she read the EBook the way it was. It took a few minutes for her to start using the tools and features. Her first action was to zoom in and out of the text. She zoomed in and out for a short amount of time until she found a comfortable format. To zoom in and out changes the size of the text and focuses more on one section of the text. Elizabeth mostly zoomed in on the text and continued to scroll as she kept reading. Though zooming in and out seems like a great tool to help the reader, my participant would sometimes lose her spot when adjusting to zoom in or out on the text. Losing her spot would then have her looking for her place in the text to continue reading and some comprehension may have been lost with the delay of reading. Next, she stopped reading at one point and played around with some of the settings. She clicked on a phrase or a couple words in the text and ended up highlighting that specific word. As she continued to read, there were some instances where she highlighted other words. After she shared what she had read to me, I asked about the highlighted words and she told me that those were the times where the text made her wonder about something or she thought it was an interesting section of the book. Lastly, there was another tool used on the iPad that I believed supported her greatly while reading.

When observing my participant, there were a couple of times during different sessions where I saw Elizabeth press on the screen, hold down a word and have an options menu be displayed. She then made a choice and clicked on one of the following options. A small window would be presented with some text. After she finished reading, I asked her what was happening when she held down and clicked on some words. For example, during one lesson she explained that there were some words that she did not know or made her have a hard time understanding what was going on in the story. When she would come across these words, she would select the word and an option of looking up the words definition would be a choice. A tool on the iPad

allowed for her to click on a word and have the option to look up the definition of a word. She explained that this process was quick and easy and let her understand more of the story when she was reading. Some of these tools and features are supportive to some students while reading. Even my participant who states she is not very experienced with iPads was able to use a limited number of tools and features to help read the story and support her understanding of the text. While there could be many distractions from all of these tools and features, students' comprehension is not hurt by the use of a device like an iPad (Sackstein, 2015). I believe these features helped her with her comprehension of the story.

**Comparing traditional texts to reading comprehension.** There are many similarities and differences between traditional texts and EBooks. Elizabeth showed both aspects quickly after beginning to read. She held a book different than she did with the iPad. I found her answers were more limited when asking her to retell the part of the same story she read from a traditional book. While I was coding and looking for patterns, I came to a conclusion when comparing the two different types of text that is presented. When students read from traditional texts, they have less distractions while reading. Traditional texts do not have any fancy tools or features to be used while the student reads. Without these tools and features, students do not become distracted by all of the extras that an iPad shares. Traditional texts only have a front cover, back cover and words on pages that have to be physically turned. Other students may find that less distraction is nice, but tools and features may turn reading into a whole new experience with extra supports. These tools and features may support students while they read and become what they need to be able to comprehend a text to their best ability. Traditional texts and EBooks will always have different strengths and weakness, but depending on the student and knowing the student is crucial to what will be most effective for their reading style.

**Finding 2: iPads Influence Reading Engagement**

When observing and conducting interviews with my student participant, I noticed how much more an iPad interested her when asked to read. Recordings on the observation sheet showed very different behaviors when compared to observations when the participant was reading from a traditional text. I observed Elizabeth engaging with the iPad and not getting distracted with other things around her. Her family members came into the kitchen and her cat came in meowing and she stayed using and reading from the iPad. Students are fully engaged towards a book when they enjoy reading and are able to comprehend most of the text. Engagement is the feeling of being able to connect with the story and characters and never wanting to put the book down. Engagement while reading has also shown advances in student's motivation and reading achievement (Jones & Brown, 2011). To observe Elizabeth so engaged with the iPad, I noticed she was able to interact more with the text. She knew what she was reading, but she was also was able to expand her thinking with her understandings.

Students learn best when they are fully engaged on their reading. Abdelhalim (2017), states, "The term 'engagement' as a goal of teaching reading is consistent with a multi-dimensional approach in that it includes behavioral, emotional/motivational, and cognitive aspects" (pg. 38). The book has the reader's full attention and has them making connections, things that may be relatable, some questions they may have, and other wonderings. When students are having these thoughts, they are shows they are actively wanting to read by their engaged behavior, they show that they enjoy reading, and they are cognitively active by noticing that they are using strategies while reading (Abdelhalim, 2017). Students are usually enjoying what they are reading and use the experience they have with the book to continue their learning.

iPads allow for students to read EBooks instead of reading from a traditional text. An iPad has features that allows for students to make changes to the text in several that may engage them more while reading. Additionally, the iPad is a new, exciting device that readers cannot wait to get their hands on at school or at home. In my initial interview with my participant, I discovered that the use of iPads at home and in the classroom was close to being non-existent for her. She shared how she does not have much experience with using devices. In the first semi-structured interview, I asked her if she used devices a lot and Elizabeth responded with, "I do not use devices much in school. We do not have a class set of laptops or tablets. I only use a laptop or a phone when I am home." Though, when it was time for her to read on the iPad, I saw the excitement she portrayed as I handed it to her. Right away she took full charge of the iPad and started reading. Right when I gave her the iPad Elizabeth asked, "Can I use anything on the iPad to help me read?" Having her ask showed me she was interested in using the iPad to read. During some sessions, I had the traditional EBook on a PDF. Other sessions I used a reading program that continually has become popular in some districts.

**RAZ kids.** RAZ Kids is a reading program that has been adopted by some districts so far and incorporated into literacy learning in the classroom and at home. This reading program allows for more interaction while reading and supports students with their reading skills. RAZ Kids has several features when students read. Students read towards their goals and for incentives after a story is completed. RAZ Kids includes several leveled readers that include comprehension checks and other supports to continue and help with literacy skills. Jones & Brown (2011), share, "context within literacy activities was an important factor crucial to reading engagement and literacy development" (p. 6).

My participant was engaging with the text with the help of the tools on RAZ Kids. One

tool used was that she chose to have the story read to her. She would pause and play the story so that the pace was comfortable for her. I found my participant to be fully engaged when reading a book that was highlighting the words while she read. The use of the highlighting tool kept Elizabeth on track and focused. Elizabeth seemed to be interested in the book by holding up the iPad at eye level and only focusing on the screen and not people or things going on around her. She was interested to see what her reward was for reading it afterwards. When my student used this reading program, it was obvious to see during my observations how excited Elizabeth was. She was already excited to be on and using the iPad, but the excitement continued when prompted to use RAZ Kids to read. When looking at my coding for reading engagement observations, it was obvious to see that my student got distracted less, did not look around or up from the book as much as a traditional text, and showed she was eager to read when she saw the iPad was present.

**Comparing traditional texts to reading engagement.** It was obvious to see the differences of attitude while reading between the iPad and traditional text. When looking over my observation notes, there were many times that I noted while reading the traditional text that my student used her hand to hold up her head, she looked up several times to look out the window, and looked around at her surroundings frequently. Her reaction to being handed a traditional book and her posture was different when an iPad was given instead. With a traditional book, my participant did not see any incentives that she may be rewarded with after reading. Though a reward may be given, it may not be as exciting and quick of a response as a program on an iPad. For example, on some programs on the iPad, a reader could be rewarded with playing a game after reading a story. With traditional books, teachers may give rewards to students who read what they are supposed to for homework and reward them for it. Elizabeth explained during

our closing semi-structured interview that she enjoyed all the different features an iPad had. My participant stated, “iPads always have more things to use when I am reading or I am able to use programs like RAZ Kids.” She continued to share how she felt while reading on the iPad and that the iPad gives her a new reading experience every time. She said, “I like to read on the iPad because there are games and quizzes to do when I am done reading.” The closing semi-structured interview allowed myself to get her full perspective on the use of an iPad compared to traditional texts. When she was given this interview, she was given many opportunities during several sessions to read from a traditional book first, then to interact with RAZ Kids and EBooks on the iPad.

### **Finding 3: iPad Features Effect Students Feelings about Reading**

The students in our classrooms have diverse opinions about how they feel about reading. The opinions can range how they read without having to be told to and where they love to read. Some may find it harder to pick up a book because they don’t want to. When coding and analyzing my data, I was able to see how my participant was feeling while she was reading from a traditional book to EBooks or RAZ Kids on an iPad. I recorded her thoughts and feelings about different texts and several findings about technology and reading were very clear.

**An iPad changes feelings about reading.** I found out a lot about her feelings from the first semi-structured interview and in the closing semi-structured interview. I looked at her language that I had recorded on the interviews when coding and noticed what words she used frequently during both interviews. When I asked her about the iPad initially, Elizabeth shared that it was more exciting and new to use the iPad for reading. She explained, “There is always something new to use and discover while using an iPad”. She also enjoyed being able to be more

interactive with books on the iPad when using programs like RAZ Kids. She told me that she felt like she could understand the story more and she was learning more because of all the different tools that could support her while reading. In the initial interview, she told me she did not read as much for pleasure. She only read in her classroom when the teacher prompted her to. She said she does not usually read at home and that she would rather play games or be on her phone. At the last session, during our last interview, Elizabeth shared that she enjoys reading when she has books on an iPad. She enjoyed the reading program and said she could see herself reading more at home if she was able to use these programs again. She said, “The iPad made reading more interesting and fun.” While observing her when reading the iPad, she looked very comfortable and focused. McClanahan (2012), shared the same idea about comfort when it comes to an iPad, “In addition, the students were able to read in more comfortable physical positions compared to reading on desk computers or laptops” (McClanahan, 2012, pg. 21).

Even though Elizabeth sat at her kitchen table for every session, I have seen students in classrooms and at home lay or sit in many positions because with the iPad they are able to find a way to be most comfortable when they read. She interacted with the iPad smoothly and showed interest in her reading through the whole session. She did have one positive opinion about the use of a traditional book. She said “once in awhile it was nice to whole an actual physical book in my hands’. She also explained to me how she knows technology cannot be relied on all the time because something could go wrong with the program or EBook. During our interview she also stated that she does not have to worry about making sure a device is charged to be able to read compared to when using a traditional text.

**What about choice?** Lastly, during one session, I noticed a change in feeling when I gave Elizabeth a choice between reading the traditional book first or the iPad first. She seemed

excited to be able to have that choice. She seemed even more excited when I gave her a choice between choosing a non-fiction and a fiction text. After that session, she shared how she enjoyed that she was able to have choices when it came to her reading. Elizabeth stated, “I do like nonfiction texts compared to fiction texts, so when I was given a choice I was more wanting to read than if I was not given a choice.” Elizabeth’s statement allowed me to understand that when students have choice, they may become more engaged with their reading, which could include with a higher comprehension rate when reading. Morgan (2013), had the same idea, “We wanted to investigate how offering reading choice might better support students’ reading and determine the instructional decisions that support teaching students who are reading multiple books rather than a core novel” (p. 659). It is natural for students to want to have choice and other studies have found benefits when choice is presented to these students. Morgan (2013), shares, “Many researchers have argued for reading choice for a variety of reasons, such as that it fosters motivation and engagement with reading, supports readers who find reading difficult and improves performance on standardized reading tests” (2013). Though, teacher may not be able to give their students choice as much as they would like to, it does benefit student growth when it is given to them occasionally.

## **Discussion**

### **Summary of Findings**

Over the course of my study, data were collected through three different data sources which included observations, comprehension checks, and two semi-structured interviews. This data was collected over 6 weeks with one participant. This data was collected to answer my research questions of how technology impacted, influenced, and made students with ADHD feel when

using it during reading instruction. The purpose of my study was to see how a student with ADHD interacted and felt about using technology to read compared to using a traditional text. After collecting and analyzing my data, findings emerged after conducting my data analysis.

My findings included: A) Traditional books have less components to distract students, but may not have the features to support a variety of students with alternate reading and comprehension abilities in a convenient way; B) iPads have various features that can be used, but sometimes these features may become distractions to some students and impact their reading comprehension; C) iPads help students become more engaged while reading through various literacy programs. The following explains the conclusion from my study on how technology influenced my participant with literacy learning.

## **Conclusion**

**Conclusion one: Traditional books have less components to distract students, but may not have the features to support a variety of students with alternate reading and comprehension abilities in a convenient way.** While observing Elizabeth, I noticed my student did not get distracted as much when using a traditional book. Though, she did look up and around once in awhile, she seemed to be focused when reading from a book. However, when I checked her comprehension, she seemed to struggle. Even though she did not get distracted a lot with the traditional book, there were features that were non-existent to support her with her literacy skills. She noted that she came to a couple of words she did not know and did not have a dictionary at the time. Even if she did have a dictionary, she would have to stop her reading currently and spend several minutes looking up the word. This delay in her reading would hurt her overall comprehension. Also, traditional text does not allow for a student to change the font

or allow it to become bigger or smaller when compared to a technological device (McClanahan, 2012). Some students may be able to read a text in a more comfortable way if it is at an appropriate size that allows them to stay focused. With my data collected, I was able to see that she seemed more focused, but because of the lack of support from the traditional text that she needs help with, her comprehension of the story was not the strongest in the end. Therefore, even though traditional texts do not have as many distractions, tools and features on an iPad gave more support to my participant with her comprehension.

**Conclusion two: iPads have various features that can be used, but sometimes these features may become distractions to some students and impact their reading**

**comprehension.** While traditional books do not have special features or tools that may support some students when reading, the iPad has plenty of features to allow for a more engaging reading experience for a student (Sackstein, 2015). While reading, Elizabeth was able to change the font size, highlight anything in the text, make notes in the text that she found interesting, had a comment on, or had a question about, check definitions on words she did not know and zoom in and out quickly on the text. Even though I saw my participant do great things with the features and tools that is equipped with the iPad, some of these features took away from her reading and hurt her ability to comprehend. One study states, “Students increasingly read digital content for learning, but research shows that the time they spend online does not necessarily aid them in developing their reading skills (Auer, 2014, p. 624). While some features like highlighting and making notes were quick actions, some tools did not go as smoothly when used.

At one point, she used the feature where you can zoom in and out on the text to make it a more comfortable size, see pictures better, or to zoom in on smaller font that maybe in captions. Though, when she used the zoom feature, there were plenty of times while reading that she had

lost her spot. This feature stopped her from reading and keeping the flow of the story, which hurt her comprehension. There were other miscellaneous features on the iPad that did not have to do with the specific reading program that was being used. Sometimes other notifications from other applications on the iPad would flash in a banner form on the top of the screen. My participant would notice these notifications, read what the notification said, then went back to reading. Though, before Elizabeth could start reading again, she needed to find where in the text she was. Another time she was distracted was when the iPad had frozen and it would not let her scroll to the next page. The freezing of the screen led to a delay of her reading, which may have hurt her comprehension because of the break of engagement of reading. Therefore, while these features and tools on the iPad add extra support for literacy practices and comprehensions, these tools and features can distract out students if not used correctly.

**Conclusion three: iPads help students become more engaged while reading through various literacy programs.** One specific program that was used throughout this study was RAZ-Kids. RAZ-Kids is an application that can be used on an iPad with the use of headphones. This program allows for students to listen, read along, or read independently on an app on the iPad. After a story is read, there are comprehension quizzes that allow students to practice their literacy skill and check their comprehension of the story. This quizzes are graded and skills that they are succeeding or struggling with is noted. This notes are sent to the teacher to review. Thompson (2014), stated, “The software allows them to progress at their own pace, and they can only move on to the next reading lesson if they pass a Raz-Kids quiz” (pg. 12).

Overall, this program allows support for both the student and the teacher. There are several features and tools students can use while reading. During one session, my student was able to have a book read aloud to her while she listened. While the book was being read to her by

the program, the words would be highlighted as it was read. Elizabeth seemed the most focused during this activity. A similar study shared, “the stories can also be heard, which helps students who do better with auditory learning” (Thompson, 2014, p. 12).

Features on RAZ-Kids on the iPad supported my student in several ways. Following the highlighted text as it was being read was one tool that allowed my student to stay focused. My student was able to listen to someone read the book aloud to her which support her with fluency and comprehension. Lastly, when taking the quiz, Elizabeth benefited from immediate feedback of the answers she chose while taking the quiz. Students are able to see if they are correct, and if they are not, the immediate feedback is given with explanation. This allows for more of a learning experience to take place while reading, and for more skills to be practiced. The program RAZ kids is a reading program that supports students with several literacy skills with their specific features. There are several features that can support a diverse classroom with their reading and literacy skills that they can transfer to their independent and literacy instruction learning.

## **Implications**

After conducting this study, I have found several implications for classrooms that may use iPads in the classroom and for classrooms with students that may have diverse needs. Both teachers and students can have a better experience with technology and reading if the following implications take place.

**Implications for teachers.** First, I believe it is always important to get to know and understand each student. Though after this study, I believe it is also important to get to know a student on a technology perspective. It will help classroom instruction when knowing what

students benefit from technology and how they benefit from it. There are so many features and tools brought to classrooms by technology, that each student may favor one over another because of how it supports that student specifically. Next, after working closely with one literacy program like RAZ-Kids, it is crucial to understand each program that may be used in the classroom. Several programs have been used and a study shared, “and not only is the device easy for teachers to use, it's easy for students to pick up and learn, too, (Ash, 2010, p. 18). Teachers can become familiar with programs that will allow for them and the students to benefit from their features in the best way. To be able to know what each program entails, allows for strong literacy instruction that can be used effectively for each student.

**Implications for students.** Lastly, it is important to keep balance in the classroom between traditional books and EBooks on different technology devices. Technology is becoming more and more popular and are used in several subject areas through out the day. While technology is new and exciting for students, it is important to use technology at appropriate times and not relied on for the whole school day. Students still need to become comfortable and familiar with tradition texts. Students need to know about book orientation and be able to practice literacy skills with with a physical book in hand. These are some implications that I would recommend and also use in my own classroom after looking at the overview of my findings.

### **Limitations**

There were various limitations through out this study. I was only able to collected data 30-45 minutes a day, once a week, for six weeks. With this short amount of time, I was only able to gather observation notes, on type of comprehension check and only two semi-structured

interviews. I only collected data in a few ways, which limited how I was able to check for comprehension and learn about student's feelings towards technology and reading. This study only focused on the work from one participant. Therefore, this study only explores the experiences of one student. With more students able to participate over a longer amount of time, more research could have been analyzed to support findings about technology and comprehension with students with ADHD and support teachers with literacy instruction.

### **Recommendations for Future Research**

Recommendations for future research would include further exploration of the ideas in this study if I were to study this topic again. I would come up with a research question that would ask what other programs has supports for readers with ADHD and do these students interact and engage with them in comparison to RAZ-Kids. Additionally, should this topic be explored by myself or other researchers, I would suggest the use of more than one reading program. Exploring more types of reading programs would allow for a lot more data to be collected and analyzed. For my study, I only focused on one type of literacy program, which only allowed me to see the outcome for only a few type of supports and tools that may only be used by that one program. Future studies could compare different literacy programs students can use and see what program has the features and tools to be able to support students in the best way possible. Another way of adding to this study would be to see the scores of our students quizzes they take on RAZ-Kids and be able to analyze them and connect them back to the use of a tradition book or iPad to read and using that to see how well they are comprehending.

### **Conclusion**

My study has allowed me to understand technology, like the use of the iPad in the

classroom, at a deeper level. This study gave me an idea of how technology will influence and impact a student with ADHD or other diverse needs in the classroom. While I found my participant was focused a good amount with a traditional book, she was able to comprehend more accurately when reading a book on the iPad. The iPad allowed for many choices of different supports and features for a student who struggled with engaging and staying focused when reading a text. Students literacy skills are enhanced when practiced on an iPad and with the use of tools and features to allow for a different reading experience. The use of technology in the classroom should be continued to help comprehension skills in the classroom. The supports an iPad can give benefits to every in the classroom with their literacy practices. The future of literacy instruction could see continuous improvements with technology as we as teachers explore the world of technology and all it has to offer.

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## Appendix A

**Semi-Structured Interview**

These questions will start the conversation with the student and get to know her as a reader. I will follow up with the participant's responses to build the conversation.

1. How do you feel about reading in school? Why?
  
  
  
  
  
  
  
  
  
  
2. How do you feel about reading at home? Why?
  
  
  
  
  
  
  
  
  
  
3. Do you read for fun? Why or Why not?
  
  
  
  
  
  
  
  
  
  
4. Which genres interest you? Why do these genres interest you the most?
  
  
  
  
  
  
  
  
  
  
5. How do you feel about using an iPad? For games? For homework?
  
  
  
  
  
  
  
  
  
  
6. Have you used an iPad to read books or texts online? If so, tell me about your experience using an iPad to read.
  
  
  
  
  
  
  
  
  
  
7. What are some challenges you have while you read?

Appendix B  
**Observation Form**

Date/Time/Technology or Book used/ Title and Author of book	Observations

Appendix C

**Retelling Recording Form**

<b>Session</b>	<b>Notes</b>
<b>Session 2</b>	
<b>Session 3</b>	
<b>Session 4</b>	
<b>Session 5</b>	

