

Digital Texts and Engagement in 2nd Grade

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Abstract

Reading engagement is a necessity for reading instruction. If students are not engaged in their reading, they may not be able to construct meaning. Recent technological advances have allowed people to access texts in electronic form. Based on this new trend in text accessibility via devices, digital texts have the potential to impact students' reading engagement compared to reading texts in traditional print. Existing research has contradicting effects identified between the link among digital texts and engagement. Therefore, this action research study examined the effects that digital texts have on the reading engagement of second grade students. During the study, students first read print texts during independent reading time. Then, students read digital texts on iPads using an application (app) called epic!. An engagement inventory, a pre- and post-survey, and a small group interview were completed to measure the reading engagement of second graders. Results indicate that engagement increased with students' access to digital texts.

Keywords: reading engagement, print texts, digital texts, digital reading

Introduction

Since the beginning of texts, most reading has been in printed form. Relatively recent technological advances have allowed people to access texts in electronic form on e-readers, tablets, and computers (Shenoy & Aithal, 2016). Everyday more and more texts are being digitized or created in digital print. People have the ability to read entire books on technological devices. These portable devices encourage universal learning with their easy access to information which allows for learning to develop (Hutchison, Beschorner, & Schmidt-Crawford, 2012).

Books are now more available than ever before with the advancements in digital access. Libraries can loan devices to patrons so they are able to read digital texts. Some public libraries borrow ebooks (short for electronic books) and audiobooks to patrons on apps such as OverDrive. Some secondary schools are being stocked with a variety of devices so students are able to read instructional materials in digital form. There are numerous apps that allow readers to read full-length books at a click of a button, such as Overdrive, Kindle, Blio, Bluefire Reader, Google Play Books, iBooks, Audible and epic! (Kansas City Public Library, 2012). Readers are able to read digital texts in a variety of ways.

Based on this new trend in text accessibility via devices, I have contemplated whether digital texts are creating a positive effect on students' reading engagement compared to reading texts in traditional print. Since print texts have been valuable to readers for thousands of years, should people change the mode they read in? Is this new technology of digital texts providing positive benefits to readers? Digital texts have resources and tools embedded within such as: built-in dictionaries, zooming in and out, text highlighting, musical scores, sound effects,

hotspots where the reader can interact with a character, foreign language translations, and more (Zipke, 2013). Other additional features on various apps can include: saving to favorites, creating reading lists, setting reading preferences, creating an avatar reader profile, read to me features, recommendation list based on reading history, and quizzes to assess comprehension. Are these features helping to engage the reader or causing distractions while reading? Because of this uncertainty, I have decided to explore the effects that reading digital texts have on my students. I would like to know if this new trend of reading digital texts is beneficial for my students.

One of my goals as a reading teacher is for all of my students to be engaged while they read. Students who are greatly engaged in their reading are also motivated, frequent, and deep readers (Wigfield et al., 2008). I want my students to be as engaged as possible and the type of text they read could either hinder or enhance their reading engagement. Therefore, the research question guiding this study is: What effects do digital texts have on the reading engagement of second grade students?

Literature Review

Reading Engagement and Motivation

Engaged readers are intrinsically motivated, read frequently, and use strategies strategically (Guthrie & Cox, 2001). Reading engagement is a necessity for reading instruction. If students are not engaged in their reading, they will not be able to construct meaning. Guthrie and Wigfield (2000) argue that reading comprehension is the outcome of an extended amount of engaged reading. Engaged readers are devoted to reading abundantly, reading a variety of genres, and having valued learning experiences. Disengaged readers are passive and rarely read for

enjoyment. Engaged reading is decisive and conceptual, as well as motivated and purposeful (Guthrie et al, 1996). There are many benefits of reading engagement.

Engaged reading is motivated, strategic, collaborative, and driven by knowledge (Guthrie & Cox, 2001). Existing research has identified a variety of ways to strengthen reading engagement. Choice is a very compelling factor when encouraging children to do any task, especially when choosing what they read. Students may be motivated to read and are more engaged when they are given the choice of what to read (Marinak & Gambrell, 2008). Choices are a way for students to express their independence and ownership over their reading (Guthrie et al, 2007). Motivation is crucial in understanding the students' choice to read, their view about reading, and the value they place upon reading (Cambria & Guthrie, 2010).

Another strategy to promote engagement is to focus on students' interests. Student engagement is related to student beliefs about their reading. Students read more often if they believe they are good readers and are intrinsically motivated to read (Baker & Wigfield, 1999). Guthrie et al. (2007) found in their research that students are cognitively engaged when they are interested in reading. Teachers can intrinsically motivate and engage their students in reading by sparking their interest in particular texts such as doing book talks or recommendations. Teachers can also use interest inventories to learn about their students' personal interests and needs. In addition, teachers need to have a rich classroom library to ensure students have a wide range of interesting books (Pressley & Allington, 2015).

Collaboration is another key factor to increase motivation and engagement in reading. This can be done by using partner reading, small group discussions, book clubs, and making

recommendations to peers (Guthrie, 2014). These readers are engaged in collaboration through exchanging ideas and understandings of books with other students (Guthrie & Wigfield, 2000).

Students devote ample time and energy to reading when they are highly involved in reading (Guthrie et al, 2007). Wigfield et al. (2008) argue that the amount of time a student is engaged in reading is a predictor of the student's motivation to read, which has been found to increase reading achievement. Thus, when engagement increases, reading performance also increases.

Multimodal Reading Instruction

Reading is a very complicated process. Skilled readers have the ability to decode words, read fluently, and comprehend strongly. Teachers have the difficult task of addressing the needs of each student wherever they are along the reading continuum. A balanced literacy approach is needed to meet the needs of all learners (Pressley & Allington, 2015). More recently, researchers have begun to suggest a balanced literacy approach should offer a variety of text modes (Taylor, 2012).

Digital texts are seamlessly multimodal rather than the alternative of having distinct processes for different modes: text, image, and sound (Knobel & Lankshear, 2014). Teachers are able to differentiate by using different modes of text to meet both the needs and interests of students. Matusiak (2013) examined the use of images and multimedia resources in a college classroom. The undergraduate students had a positive learning experience in the resource-rich, multimodal class which aided their engagement and different learning styles. The study confirmed that multimodal instruction plays a role in shaping positive attitudes and engaging students. Information processing activities and non-textual resources have emerged into the

ever-changing concept of literacy. Technological, information, visual, and media are now commonly used terms that reflect the recent changes in literacy (Matusiak, 2013; National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). Since language and terms are continuously being altered by new forms of communication media, comprehension is becoming more multimodal (Love, 2004).

In addition, Walsh, Asha, and Springer's (2007) research shows that using more than one mode effects learning. In their research with primary grade students, they found that when reading multimodal texts, students use a variety of senses such as sight, hearing, tactile, and kinesthetic. Students are able to concurrently process the various modes of print, image, sound, music, movement, graphics, and animation when using digital media, which shows that they are able to multitask. These multimodal resources can assist in more active and reflective reading.

Positive Impact of Digital Reading

With the increase in technology, there may be a shift toward using more technological devices to read. As young children continue to learn to read through print books, there are signs that digital reading is becoming a larger part of their reading life as they grow as readers (Jones & Brown, 2011). Clinton (2019) identified digital reading as reading a text from a device's screen. These texts can be accessed from a variety of devices such as ereaders, computers, and smartphones. A single device gives readers access to a large amount of books. These features give digital reading more convenience over paper in the aspects of accessibility and feasibility. Advocates of digital reading highlight the lower costs of digital texts compared to paper books (Hancock, Schmidt-Daly, Fanfarelli, Wolfe, & Szalma, 2016).

Hutchison, Beschorner, & Schmidt-Crawford (2012) found that devices allow students to

read texts with the support of word-by-word tracking, audio assistance, and animated pictures. There are even options for readers to additionally interact by recording and replaying their own voice. Digital texts also can provide the definition and pronunciation of any word by simply touching the word on the screen. Readers may also interact by adding notes or highlighting specific sections by tapping the screen on some devices. The features of digital texts individualize the reading experience for the student. These additional tools even aid students with special needs by reading the text (Larson, 2010).

Students of the 21st century are using digital tools more and more. Children enjoy playing on their personal devices in a variety of ways. Since children are immersed in multimodal experiences outside of school, there is a pressing need for teachers to focus on the disparity between the types of literacy experiences children have at school and at home (Larson, 2010). The best ebooks utilize this new text medium while still supporting effective literacy practices (Zipke, 2013). The results of Korat and Shamir's (2008) study on emergent readers supports this belief that ebooks designed by educational professionals can have positive effects on children's literacy development such as word meaning, word recognition, and phonological awareness. Digital texts can also influence the reader's comprehension. According to Larson (2010), second grade students used features of digital reading (font size adjustments, built-in dictionary to find the meaning and pronunciation of words, and the text-to-speech tool) to aid in their comprehension processes.

Since children are using technology more than ever and there are researched positive effects, does this mean that students should be reading digital texts? Should teachers have a balance in the use of print and digital texts or a preferred mode? Bulfin and Koutsogiannis

(2012) suggest students require a mix of print and digital texts. Students use creative and innovative technology out of school and those technologies can potentially help students be more productive with instructional tasks, more specifically reading related tasks.

Our world is becoming a technological powerhouse, with digital tools serving as a source for communication. Educators need to prepare students for this 21st-century technology heavy world. Kenner & Kress (2003) believe that students will be more likely to construct meaning if they can read a variety of modes. In this multilingual world, being able to read different modes effectively is a beneficial resource for life success. Because of the increase in multilingualism, a wider view of what counts as literacy is needed. The ultimate goal of reading is for readers to construct meaning from the text (Pressley & Allington, 2015). Therefore, within our increasingly digital and multilingual world, students need to be able to construct meaning from a variety of texts, including digital texts.

Negative Impact of Digital Reading

While there are identified benefits of students engaging in reading using digital mediums, there is also research that highlights some negative effects of reading digital texts. Based on a review of 33 independent studies involving 2,799 participants, reading from screens had a negative effect on reading performance compared to reading on paper (Clinton, 2019). It was also found that readers more accurately judged their performance from paper compared to screens. In addition, a study with tenth-grade students found comprehension was better with reading narrative and expository texts on paper compared to reading the same texts on a computer screen (Mangen, Walgermo, & Brønnick, 2013). Furthermore, Aharony & Bar-Ilan

(2018) found that university students' comprehension was higher with printed texts than when reading digital texts.

There are additional negative effects associated with digital mediums. When reading digital texts, it requires more work to synthesize information because of the complex format of the texts (Lee & Wu, 2012). Another negative effect of screen reading is that it takes more mental energy (Badulescu, 2016). This is an important finding for the classroom because the increased use of cognitive space results in a decreased amount of retained material.

Not only is there research on reading performance and digital reading, but there is also research on reader preference. Several studies show that readers prefer print texts over digital texts. Undergraduate students reading e-books for coursework described digital reading as an unpleasant experience (Muir & Hawes, 2013). The students had problems with access, experienced inconvenient navigation tools, and received inadequate information from search results. Aharony & Bar-Ilan (2018) explain that university students prefer academic printed materials over using digital materials. There are features of reading print books that readers prefer over ebooks: less eye strain, convenience of the tactile elements of holding, flipping and paging through printed material, printed pages allow better memory cues, easier to highlight and annotate printed readings (Mizrachi, 2015). Therefore, there are multiple factors that contribute to the negative impacts of digital reading.

Digital Reading Engagement

With this ever-changing technological environment, teachers need to use a variety of strategies to engage students in reading. This includes using a variety of multimodal texts, such as digital texts to meet the needs and interests of students (Taylor, 2012). As stated above, choice

is a strong approach to increasing engagement. Digital texts can be found on numerous websites and apps. The devices used to access the websites and apps are accessible to children. These databases contain hundreds and even thousands of titles that students are able to choose from. In addition, unlike print books, digital texts can allow readers to read any title, at any place and time with some restrictions (Guernsey, 2011). Having the ability to locate a title of their choice with the click of a button helps students engage in their reading.

There is additional research based on the positive effects of engagement and digital texts. Brown's (2016) study found that the interactive features of digital texts helped students remain on-task as they read. The features heightened their enthusiasm for reading and increased their amount of reading. Students were also engaged in conversation with peers which helped increase their comprehension. Lastly, the study showed that the students appeared more confident in their reading abilities when reading digitally. Another study investigated how mobile devices can foster effective reading practices. Hutchison, Beschoner, & Schmidt-Crawford (2012) found that using iPads for literacy instruction in a fourth grade classroom supported both student learning and highly engaged reading. Students also demonstrated unique and creative responses to texts using the device. Yet Larson (2010) shared more positive experiences with digital reading. This study of second grade students in a Midwestern city shows that the various tools and features empower the reader to physically interact with and manipulate the text. These features put the reader in greater control than when reading a print book. This results in the reading experience being interactive and engaging by also enhancing the connection between the reader and the text.

However, to the contrary, there are also studies that show that digital reading can hinder

reading engagement. In Lefever-Davis and Pearman's (2005) study, first grade students got easily distracted by the animation features (similar to gaming features) that would play before the words appeared. These animation features also prolonged the time needed to read the story which fatigued and frustrated the readers. Dobler (2015) explains in her study why some readers prefer print over e-text. The reasons include: familiarity with the print format, connection to the physical movement of paper turning, eye strain with screen reading, and too many distractions when reading online. The transition from print to digital texts may take some time.

Lastly, students may also enjoy reading both digital and print texts. According to one research study, second grade students shared that they enjoy both digital and print reading. More than half of the students preferred reading print library books. However, these students also enjoyed reading digital texts on the computer (Taylor, 2012). In addition, college students also prefer both reading digital and print texts based on the specific purpose of their reading. Foasberg (2011) states that college students prefer reading ebooks for leisure reading but use printed material for studying.

Since there are contradicting effects identified between the link between digital texts and engagement, there is a need for further investigation. With these identified effects, two questions arise: Will students be as motivated to read digital texts as print texts? Will student reading engagement be impacted? Therefore, this action research project examined engagement of readers and digital texts within an elementary classroom. The purpose of the study was to examine the reading engagement trends of second grade students who read print and digital texts.

Methods

In this action research study, my purpose was to examine the engagement trends of students while reading print and digital texts. I used mixed-methods action research to determine if students are more engaged readers if they read print or digital texts. As a classroom teacher, I collected data within my current classroom.

Participants and Setting

The data for this action research project was collected from February to March 2019. This study took place in a single-section, K-5 elementary school in a rural town in the upper Midwest. There are approximately 105 students in this elementary school. The average class size is 17 students. 93% of students are white and 30% of students are economically disadvantaged. There are no English Language Learners currently enrolled at this school. The participants for this research project are the 16 students in second grade. There are nine males and seven females in the class. There are no participants with an Individualized Education Plan.

This elementary school is technically 1-to-1 with devices based on the ratio of devices to the number of students. However, the devices are not housed in the classrooms and each student does not have their own personal device. Each day during intervention, classes get a chromebook cart of 30 devices to use. During the 30-minute intervention time, most students are able to go on Raz-Kids, an app where students read digital texts at their instructional reading level. First, the book is read to them. Then, students read the same text on their own. Lastly, they take a quiz on the text. In 1st Grade, these students read books on the epic! app during intervention.

The data for this study was collected during the 60-minute Reader's Workshop block. During this block, students have between 20 and 40 minutes to read independently. During the independent reading time, I collected the engagement reading data on the students. I checked out

the iPad cart to allow each student to have access to their own iPad.

Data Collection and Procedures

I completed my research by doing an action research study. I decided on this type of research since I am currently teaching second grade. I was able to collect my data without interrupting or interfering with the traditional reading instruction of my students.

To begin, I administered the pre-survey (see Appendix A) to determine my students' beliefs and opinions about print and digital reading. This survey was a baseline of the students' reading preferences. The survey measured the students' preferences with print and digital books on the epic! app. It also assessed the students' perceived reading stamina when reading print and digital books. Lastly, it measured the students' opinions of their reading ability when reading print and digital books. Before the study began, the second grade students read only print texts during independent reading time. They had limited experiences reading digital texts as stated above.

Week One. Students read print texts during independent reading time like they have all school year. Students were able to choose any books to read from my classroom library. I have approximately 1,000 books for my students to choose from. Three times during the first week, I used an adapted version of Jennifer Serravallo's (2013) engagement inventory (see Appendix B) to record the engagement behaviors of students during independent reading time. During this time, I surveyed the room every five minutes to record which of the 11 behaviors each student was displaying. The five engaged reading behaviors were: engaged, student to student talk about text, reading with teacher, talking with teacher about text, or switching books. The six unengaged

reading behaviors were: talking not about text, looking around, zoning out, walking around, or bathroom/drink. If a student was absent, out of the classroom working with another teacher, or out of the classroom because of severe behaviors, they were not counted in the data. This is a quantitative record of how engaged the students were when reading print texts. The inventory was used to determine what percentage of students were actively engaged in reading versus other unengaged behaviors students were exhibiting during this time.

Week Two and Three. I introduced the epic! app to the class and strategically taught how to use the app. I specifically taught all the features and options of epic! and how to use them. Epic! is a website and app that has approximately 25,000 digital texts, videos, and quizzes for readers under 12 years old. Students were able to choose between the three types of digital texts: ebooks, read-to-me books, and audiobooks. Each student had their own profile where they saved their reading preferences, saved their favorite books or collections, and searched by a variety of categories and types of books.

During weeks two and three, students used iPads to go on epic! during independent reading time. Just like our normal independent reading time, students were able to sit anywhere in the classroom and read. They were able to explore with the features of epic! and determine their preferences. Students were able to choose from the three different text modes. When listening to “read to me” books, the reader had the option to track the print by highlighting the word that the speaker is on. In both “read to me” and ebooks, students are able to click on the word hear the pronunciation and read the definition. During these two weeks, I used my adapted version of Jennifer Serravallo’s engagement inventory four additional times to determine the percentage of reading engagement when my students were reading on epic! Since it was much

harder to see if students were engaged or not when using an iPad versus a print book, I walked around to each student every five minutes so I could see the screen. By looking at the screen, I was able to determine which of the 11 behaviors the student was exhibiting.

Week Four. During the fourth week, students used epic! during independent reading time. However this time, students were only able to read ebooks on epic! This gave the closest reading experience compared to reading a print text. The ebooks do not read the words to the students. Students needed to decode and read fluently without supplemental assistance, just like they do when they read traditional print books. Students read only ebooks on week four so their engagement level could be compared to weeks two and three.

At the end of the four weeks, I administered a post-survey (see Appendix C) to all students. This was the same survey as the pre-survey, but with six additional questions at the end that were specific to using epic!. The additional questions addressed using the features of epic!, if they were distracting, and the different text types within the app. I then analyzed the results of the pre- and post-survey questions to see if student preferences changed during the study.

In addition, I interviewed a small group of students about their experience and preferences reading print texts and digital texts (see Appendix D). This focus group was a cross-section of my second grade class (Table 1). It had six students with three males and three females. There were two above-level reading students, two on-level reading students, and two below-level reading students. The group also included two of my least engaged readers based on in-class observation. These two students have very little reading stamina during Reader's Workshop each day. I asked questions that were more specific and thorough than the survey questions. I also asked about what particular features they used on Epic!, if those features were

engaging or distracting, what their stamina was like, and how engaged they were on each text type and why. The entire interview was audio recorded and then analyzed for patterns and trends.

Table 1

Interview Participants

Student Name	Gender	Reading Level	Engagement Level
Aaron	Male	On-level	Low
Abby	Female	Above-level	High
Cade	Male	Below-level	Low
George	Male	Above-level	Average
Grace	Female	On-level	High
Molly	Female	Below-level	Average

Note. Reading and engagement levels are based on classroom assessments and observation. These levels are not associated with the study.

Data Analysis

To analyze the data, the pre- and post-surveys were charted and graphed to show the differences and patterns in responses after reading print and digital texts during independent reading time. The data from the engagement inventories was analyzed in several ways. The engaged behaviors were averaged for each five minute period as were the unengaged behaviors. Then, an average of all engaged/unengaged behaviors were taken for that day's Reader's Workshop period. Next, an average was taken from all the days during that week to calculate a weekly average. Lastly, I analyzed the interview by listening to it multiple times to notice trends and patterns between the students and the survey responses.

Findings and Results

Survey

The results from the pre- and post- surveys are listed in Figure 1. It contains the percentage of students that replied “yes” or “very much” to the eight questions that were on both surveys. The post-survey was taken four weeks after the pre-survey. The table shows that there was a decrease in the amount of students that like reading print books from 81% to 50%. There was no change in the amount of students that like reading digital books. It stayed consistent at 63%. Moreover, the pre-survey data showed that 63% of students like reading print books better than digital books. This dramatically decreased on the post-survey. Only 19% said that they like reading print books better. Lastly, the two salient questions on the survey that relate to reading engagement were asking about stamina. During the pre-survey, 44% of students said they had good stamina when reading print books compared to 31% on the post-survey. According to the pre-survey, 50% of students said they had good stamina when reading digital books compared to 75% on the post-survey.

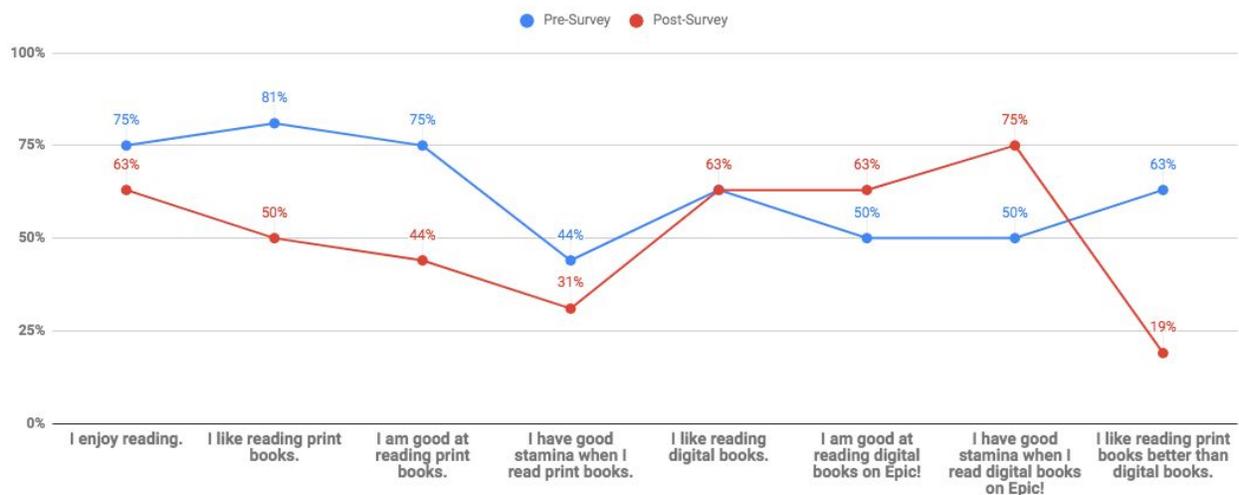


Figure 1. Percentages of students who replied “yes” or “very much” to questions on pre- and post-survey

Engagement Inventory

The results from the engagement inventories are listed in Table 2. During *Week 1* when

students were reading only print texts, an average of 76% of students were engaged in their reading. During *Week 2 and 3* when students were reading any of the three modes on epic!, an average of 89% of students were engaged readers. During *Week 4* when students were only allowed to read ebooks on epic!, an average of 92% of readers were engaged. Therefore, according to the data, students were more engaged when reading digital texts. Furthermore, the students were the most engaged when reading only ebooks on epic!

Table 2

Engagement Inventory Data

Week	Engaged	Unengaged
1 - Print Texts	76%	24%
2 & 3 - Digital Texts (all modes)	89%	11%
4 - Digital Texts (ebooks only)	92%	8%
Difference in engagement between print and ebooks (Week 1 to Week 4)	+16%	-16%

Note. Average percentage of students exhibiting engaged or unengaged behaviors

Interview

After analyzing the interview, I noticed multiple themes that kept occurring throughout the interview. The most prominent theme that materialized during the interview was the students' belief that they were more engaged on epic! than compared to reading print books. Five out of the six focus students had multiple reasons stating why their engagement was better on epic! When responding to Question 6 about digital reading stamina, Aaron explained, "I have awesome stamina because everybody's into their books so nobody's moving around a lot so I

can stay in one area.” Aaron has a very hard time sustaining his reading engagement. He is explaining that he moves multiple times when reading print texts because he easily get distracted by others near him. When students are reading on epic! they are so engaged in their reading, therefore Aaron is not distracted by them. George also responded to Question 6, “I have good stamina on epic! because there’s more books. When you finish one you can just go right to another one and if you like that book, they have more books in that series.” George is explaining that he remains engaged because he can easily pick out another book that he enjoys without breaking his stamina.

When responding to Question 8 (Are you more engaged when reading print or digital texts?) the trends continued. Grace responded, “Epic! because when I’m reading a book I barely have to look away from the book. Like once I’m done with a book I can still look at the iPad. I don’t have to look somewhere else.” Again, students know that they might be distracted if they look elsewhere and epic! helps them to keep their eyes on books which helps them increase their stamina. Molly responded by saying that she is more engaged on epic! because you don’t have to get up to get new books. Therefore, students shared that epic! is more engaging because it is easier to pick out new books, there are more titles to choose from, and students are not moving around to get new books.

One out of the six students in the interview group said that he is more engaged with print books.

Cade responded, “I’m more engaged with print books because [with] the print books you get to do all the work. They show you umm pictures that are actually drawn and doesn’t get blurry. And you don’t get distracted by features.”

Cade's reference to doing all the work is related to needing to decode the words he does not know versus the app reading the words for him. He also states that there are no features in print books to distract him.

On the contrary, the other five students had various reasons why the features on epic! were useful and engaging. When responding to Question 6 on epic! features Abby stated, "...you can tap it and it will read it to you and then it can tell you what it means." Abby is referring to the built-in dictionary on epic! It will pronounce the word that is clicked on and also give the definition. Aaron likes using the highlighting feature in epic! as a decoding strategy. He explains, "...You can be a skippy frog where you can highlight the word, skip that word, go onto the rest and then figure it out and then reread the whole page." Additionally, I asked if you get to a tricky word do you click on it or try to figure it out first. Grace responded, "...I try to sound it out and if I still can't figure it out, I tap on it."

Two students who already shared the positive effects of features also indicated two negative qualities. George said, "[The text-to-speech tool] distracts me because sometimes when I have the volume on then it says it out loud." Grace shared, "...when I tap on a word it might go to another word and it keeps on happening so it distracts me with my reading." These two responses are more of a technology issue than the features being distracting. Therefore, according to the group of interview students, they use the features of epic! to benefit their reading and engagement.

The interview also referenced what types of books on epic! the students liked reading. The three modes include: read to me, audiobooks, and ebooks. Four out of the six students said that they like reading ebooks and sometimes read to me or audiobooks. The other two students

said that they like reading ebooks. Cade explained why he likes only reading ebooks when on epic!, “I like to read regular books (ebooks) because it helps me get better at reading.” Cade goes on to explain that read to me books don’t help him get better at reading because it reads the book to him. Based on the interview responses, the most popular mode on epic! is the ebook.

Discussion

In the present study, I examined the reading engagement trends of second graders who read print and digital texts. My analysis of the surveys, engagement inventories, and interview shows that students overall are more engaged when reading digitally on epic!. The quantitative results from the surveys and engagement inventories show that students are the most engaged when reading ebooks on epic!. The qualitative findings from the interview show that students believe they have better stamina when reading on epic!. My data does not show however, that students are unengaged when reading print texts. The data only shows that there is an increase in engagement when reading digital texts.

From this research, I believe that choice and accessibility were large contributors to students’ engagement and preference with epic!. As stated in the literature review, choice is a valuable way to increase reading motivation and engagement (Marinak & Gambrell, 2008). During the interview, students said that they were more engaged on epic! because there were more book choices compared to the print books in my classroom library. They shared that they liked searching by topics to find books they were interested in. Once they found a book they liked, the app would give them a list of books in the same series. Clinton (2019) stated that the features of digital texts give more convenience to readers in the aspects of accessibility and feasibility. Additionally, during the interview, students shared that it was easier to pick out a new

book on epic!. They did not have to get out of their seat to get a new book. This also meant that other students were not walking around searching for new books which helped to eliminate distractions.

Based on the research I conducted and the distractibility of my students observed before the study began, I predicted that the features on epic! would distract students and decrease their reading engagement. The first graders in Lefever-Davis and Pearman's (2005) study were easily distracted by the features included within the digital texts. Based on the post-survey, 63% of my students said that the features did not distract their reading. According to the interview, five out of the six students shared that they enjoyed the features on epic! and that they were not distracting. Aaron stated, "The features do not distract me, they help me. Sometimes I get like oh that's kinda cool." Brown (2016) shared that the interactive features of digital texts helped the readers remain on-task as they read. The only negative opinions of the features on epic! were technology issues (calibration and accidentally touching the screen) and not wanting the book to be read aloud. I think the features of digital reading allow students to feel in greater control of their reading. This finding aligns with the work of Larson (2010).

Another digital reading feature that is unlike print is that students can have the book read to them. On epic! this type of text is called "read to me". Before the study began, I was concerned that students would only choose "read to me" books on epic! because it would be the easiest mode to read. Students could listen to the whole book and never need to decode. This is why I decided, that during Week 4, students would only read ebooks on epic!. Ebooks are most comparable to print texts. According to the engagement inventory (see Table 2), students were engaged 92% of the time when reading ebooks. Reading only ebooks was the largest percentage

of engagement during the study. During the interview, students shared that they liked the ebooks best because they can grow as readers. If they are read to, they are not becoming better readers. I thought these were very mature statements for second graders. According to the post-survey, 44% of students like “read to me” books and 63% of students like ebooks. Therefore, students like both modes but like reading ebooks a little more. My previous prediction about my students always wanting to read “read to me” books was incorrect. Second graders were the most engaged when reading ebooks and were thinking about how to become stronger readers.

Before beginning the study, I was apprehensive that my students would use the built-in dictionary to hear the word pronounced instead of using decoding strategies to figure out the unknown word. Ideally, my students continually practice decoding strategies when they read independently to help them become better word callers. When reading print books, students must use their own strategies to decode words. There is not a tool that will read the word to them. To learn more about my students’ decoding strategies while reading digitally, I addressed my concern during the interview. I asked students if they always click on the word to hear it read aloud or if they use a decoding strategy first. Most students shared that they try to figure out the word first, then if needed, they tap on the word to hear it pronounced. In Lefever-Davis and Pearman’s (2005) study with first graders, the digital pronunciations in the storybooks were interpreted as a support and a distraction for students. Some of the first graders used the feature to confirm their predictions of unknown words, while other readers viewed the feature as a distraction and it also led them to take a more passive role in decoding. Since I do not have definite proof that my students always tried a decoding strategy first, my findings are inconclusive here and would need future analysis.

Limitations

Several factors limited the effectiveness of this study. A limitation of the engagement inventory was that I had two adults (student teacher and volunteer) conferring with students during independent reading time. This meant that at any given time, two students were conferring with a teacher. I recorded this on the engagement inventory as “reading with teacher” or “talking with teacher about text” depending on the interaction. This meant that two out of the sixteen students were always engaged in their reading because they were working with an adult. Therefore, are the engagement inventory results skewed toward engagement? Would the results have changed if there were no adults conferring with students during independent reading time?

A limitation of my pre- and post-surveys is that my students may not all have the same understanding of stamina. During the surveys (see Figure 1), I asked about their stamina. On the pre-survey, 44% of students said they have good stamina when reading print books. On the post-survey, only 31% of students responded yes to this question. On the pre-survey, 50% of students said they have good stamina when reading digital books. On the post-survey, 75% of students responded yes to this question. The data shows that the students’ print stamina decreased while their digital stamina increased. This may mean that their stamina is better when reading digital texts. But it is unclear, because I cannot be certain that all my students have the same understanding of what it means to be engaged and have good reading stamina.

Implications

Based on the results of the study, should my students read only digital texts or should there be a mixture of both text modes? According to the surveys and interview responses, there are some students who like reading digital texts better and some who like reading print texts

better. Taylor (2012) and Foasberg (2011) stated that students enjoyed reading both print and digital texts. Therefore, should students be reading both digital and print texts? According to Marinak & Gambrell (2008), choice is a very compelling factor when motivating students to read. Based on the research I conducted and the findings of my study, I think that students should get a choice in what text mode they read. If they get a choice, they will be more motivated to read which will increase their reading engagement.

In the future, I want my classroom library stocked with books and multiple iPads available for students to read from epic!. I will give my students the choice of reading print or digital texts. Allowing this choice, will hopefully increase my students' reading engagement to its fullest potential. Elementary teachers should give their students a choice between reading print and digital texts. If giving students a choice between digital and print texts is not feasible, the next best option would be to alternate between the two modes. For example, one week the whole class could read print texts and the next week digital. Or the class could read digitally three days a week and print two days a week. There are variety of different options to give students a mixture of both digital and print texts. In conclusion, the study shows that students were more engaged when reading digitally. Choice, accessibility, helpful features, and the availability of ebooks may be some contributing factors to the increased digital reading engagement of second graders on epic!.

References

- Aharony, N., & Bar-Ilan, J. (2018). Students' academic reading preferences: An exploratory study. *Journal of Librarianship and Information Science*, 50(1), 3-13. doi:10.1177/0961000616656044
- Badulescu, D. (2016). Reading in the digital age. *Philologica Jassyensia*, 12(1), 139-149.
- Baker, L., & Wigfield, A., (1999). Dimensions of children's motivation for reading and their relations to reading activity and reading achievement. *Reading Research Quarterly*, 34(4), 452-477. doi:10.1598/RRQ.34.4.4
- Brown, S. (2016). Young learners' transactions with interactive digital texts using e-readers. *Journal of Research in Childhood Education*, 30(1), 42-56. doi:10.1080/02568543.2015.1105887
- Bulfin, S., & Koutsogiannis, D. (2012). New literacies as multiply placed practices: Expanding perspectives on young people's literacies across home and school. *Language and Education*, 26(4), 331-346. doi:10.1080/09500782.2012.691515
- Cambria, J., & Guthrie, J. (2010). Motivating and engaging students in reading. *New England Reading Association Journal*, 46(1), 16-29.
- Clinton, V. (2019). Reading from paper compared to screens: A systematic review and meta-analysis. *Journal of Research in Reading*, 0(0), 1-38. doi:10.1111/1467-9817.12269
- Dobler, E. (2015). E-textbooks: A personalized learning experience or a digital distraction? *Journal of Adolescent & Adult Literacy*, 58(6), 482-491. doi:10.1002/jaal.391
- Foasberg, N. M. (2011). Adoption of e-book readers among college students: A survey. *Information Technology and Libraries*, 30(3), 108-128. doi:10.6017/ital.v30i3.1769

- Guernsey, L. (2011). Are ebooks any good? Do digital books help young kids learn to read, or are they mostly fun and games? *School Library Journal*, 57(6), 28-32.
- Guthrie, J. T. (2014). Best practices for motivating students to read. In L. B. Gambrell & L. M. Morrow (Eds.), *Best practices in literacy instruction*. New York, NY: Guilford Press.
- Guthrie, J. T., & Cox, T. (2001). Classroom conditions for motivation and engagement in reading. *Educational Psychology Review*, 13(3), 283-302. doi:10.1023/A:1016627907001
- Guthrie, J. T., Hoa, L. W., Wigfield, A., Tonks, S. M., Humenick, N. M., & Littles, E. (2007). Reading motivation and reading comprehension growth in the later elementary years. *Contemporary Educational Psychology*, 32(3), 282-313. doi:10.1016/j.cedpsych.2006.05.004
- Guthrie, J.T., Van Meter, P., McCann, A.D., Wigfield, A., Bennett, L., Poundstone, C.C, . . . Mitchell, A.M. (1996). Growth of literacy engagement: Changes in motivations and strategies during concept-oriented reading instruction. *Reading Research Quarterly*, 31(3), 306-332. doi:10.1598/RRQ.31.3.5
- Guthrie, J.T., & Wigfield, A. (2000). Engagement and motivation in reading. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.). *Reading Research Handbook*, 3, 403–424. Mahwah, NJ: Erlbaum
- Hancock, G. M., Schmidt-Daly, T. N., Fanfarelli, J., Wolfe, J. L., & Szalma, J. L. (2016). Is e-reader technology killing or kindling the reading experience? *Ergonomics in Design: The Quarterly of Human Factors Applications*, 24(1), 25–30, doi:10.1177/1064804615611269

- Hutchison, A., Beschorner, B., & Schmidt-Crawford, D. (2012). Exploring the use of the iPad for literacy learning. *Reading Teacher, 66*(1), 15-23. doi:10.1002/TRTR.01090
- Jones, T., & Brown, C. (2011). Reading engagement: A comparison between e-books and traditional print books in an elementary classroom. *International Journal of Instruction, 4*(2), 5-22.
- Kansas City Public Library (2012). The 7 best ebook apps for your smartphone or table. Retrieved from <https://www.kclibrary.org/blog/kc-unbound/7-best-ebook-apps-your-smartphone-or-tablet>
- Kenner, C., & Kress, G. (2003). The multisemiotic resources of biliterate children. *Journal of Early Childhood Literacy, 3*(2), 179-202. doi:10.1177/14687984030032004
- Knobel, M., & Lankshear, C. (2014). Studying new literacies. *Journal of Adolescent & Adult Literacy, 58*(2), 97-101. doi:10.1002/jaal.314
- Korat, O., & Shamir, A. (2008). The educational electronic book as a tool for supporting children's emergent literacy in low versus middle SES groups. *Computers & Education, 50*(1), 110-124. doi:10.1016/j.compedu.2006.04.002
- Larson, L.C. (2010). Digital readers: The next chapter in e-book reading and response. *The Reading Teacher, 64*(1), 15-22. doi:10.1598/RT.64.1.2
- Lee, Y., & Wu, J. (2012). The effect of individual differences in the inner and outer states of ICT on engagement in online reading activities and PISA 2009 reading literacy: Exploring the relationship between the old and new reading literacy. *Learning And Individual Differences, 22*(3), 336-342. doi:10.1016/j.lindif.2012.01.007

- Lefever-Davis, S., & Pearman, C. (2005). Early readers and electronic texts: CD-ROM storybook features that influence reading behaviors. *Reading Teacher, 58*(5), 446-454. doi:10.1598/RT.58.5.4
- Love, M. S. (2004). Multimodality of learning through anchored instruction. *Journal of Adolescent and Adult Literacy, 48*(4), 300-310. doi:10.1598/JAAL.48.4.3
- Mangen, A., Walgermo, B. R., & Brønnick, K. (2013). Reading linear texts on paper versus computer screen: Effects on reading comprehension. *International Journal of Educational Research, 58*, 61-68. doi:10.1016/j.ijer.2012.12.002
- Marinak, B. A. & Gambrell, L. B. (2008). Intrinsic motivation and rewards: what sustains young children's engagement with text? *Literacy Research and Instruction, 47*(1), 9-26.
- Matusiak, K. K. (2013). Image and multimedia resources in an academic environment: A qualitative study of students' experiences and literacy practices. *Journal of the American Society for Information Science and Technology, 64*(8), 1577-1589. doi:10.1002/asi.22870
- Mizrachi, D. (2015). Undergraduates' academic reading format preferences and behaviors. *The Journal of Academic Librarianship, 41*(3), 301-311. doi:10.1016/j.acalib.2015.03.009
- Muir, L., & Hawes, G. (2013). The case for e-book literacy: Undergraduate students' experience with e-books for course work. *The Journal of Academic Librarianship, 39*(3), 260-274. doi:10.1016/j.acalib.2013.01.002
- National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). Common core state standards for english language arts. Retrieved from <http://www.corestandards.org/ELA-Literacy/>

- Pressley, M., & Allington, R. L. (2015). *Reading instruction that works: The case for balanced teaching* (4th ed.). New York, NY: The Guilford Press.
- Serravallo, J. (2013). *The literacy teacher's playbook, grades 3-6: Four steps for turning assessment data into goal-directed instruction*. Portsmouth, NH: Heinemann.
- Shenoy, P., & Aithal, P. S. (2016). A study on history of paper and possible paper free world. *International Journal of Management, IT and Engineering*. 6(1), 337-355. doi:10.5281/zenodo.161141
- Taylor, M. F. (2012). Digital reading: A look at a second grade class. *School Library Monthly*, 29(2), 11-14.
- Walsh, M., Asha, J., & Spranger, N. (2007). Reading digital texts. *Australian Journal of Language and Literacy*, 30(1), 40-53.
- Wigfield, A., Guthrie, J. T., Perencevich, K., Taboada, A., Klauda, S. L., McRae, A., & Barbosa, P. (2008). Role of reading engagement in mediating effects of reading comprehension instruction on reading outcomes. *Psychology in the Schools*, 45(5), 432-445. doi:10.1002/pits.20307
- Zipke, M (2013). Building an e-book library: Resources for finding the best apps. *The Reading Teacher*, 67(5), 375-383. doi:10.1002/TRTR.1221

Appendix A

Pre-Survey

Name: _____

	Don't Know	Not at all	No	Sometimes	Yes	Very Much
1. I enjoy reading.						
2. I like reading print books.						
3. I am good at reading print books.						
4. I have good stamina when I read print books.						
5. I like reading digital books.						
6. I am good at reading digital books on Epic!						
7. I have good stamina when I read digital books on Epic!						
8. I like reading print books better than digital books.						

<https://ermljped.a.org/people/>

Appendix C

Post-Survey

Name: _____

	Don't Know	Not at all	No	Sometimes	Yes	Very Much
1. I enjoy reading.						
2. I like reading print books.						
3. I am good at reading print books.						
4. I have good stamina when I read print books.						
5. I like reading digital books.						
6. I am good at reading digital books on Epic!						
7. I have good stamina when I read digital books on Epic!						
8. I like reading print books better than digital books.						

<https://emojipedia.org/people/>

9. I like using the features on Epic!						
10. I like reading "read to me" books on Epic!						
11. I like listening to audiobooks on Epic!						
12. I like reading the books that don't read to you on Epic!						
13. When I read on Epic!, I get distracted by the features.						
14. I am more engaged on Epic! than reading print books.						

Appendix D

Interview Questions

1. Do you like reading print books? Why?
2. Tell me about your stamina when you read print books.
3. Do you like reading digital books on epic!? Why?
4. What type of books do you like reading on epic!? Read to me? Audiobooks? Books?
5. Tell me about your stamina when you read digital books on epic!
6. What features do you like to use on epic!?

Additional Question added during interview: If you get to a tricky word, do you always click on it or do you try to figure it out first?

7. Do you get distracted by these features?
8. Are you more engaged when reading print or digital texts?