

*Using E-Readers to Improve Reading for Students with Mild Disabilities*

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*Abstract*

Improving reading comprehension and fluency in students with mild disabilities has long been a challenge for educators. Technology has provided a host of new possibilities for working with students with mild disabilities. This study incorporated a mixed method to investigate the potential of using E-Readers as an instructional tool. Three features of E-Readers were thought to be of particular benefit to students with mild disabilities: (a) the ability to change the font, (b) the text to speech feature, and (c) the dictionary feature where students highlight a word and the definition pops up.

*Using E-Readers to Improve Reading in Elementary and Middle School Students with Learning Disabilities*

The importance of reading in everyday life cannot be underestimated. The ability to read determines who we are and is the foundation for the acquisition of knowledge that will contribute to our future success. Literacy skills provide individuals with the “ability to obtain information.... with which to make decisions and choices, alter the environment, and gain pleasure” (Alberto, Fredrick, Hughes, McIntosh, and Cihak, 2007).

Students today live interchangeably in a traditional text and digital media environment. Both the student and teacher are required to understand and move seamlessly between competencies with technology, connections with the social environment and integration with the literacy environment within the schools as well as in their personal life. In order to meet the needs of a diverse student population and help students achieve the highest academic standards educators must increasingly look to the digital offerings as well as the standard printed word to ensure that all students are being well educated. The same material in digital form offers many options for

students with disabilities. Many e-books employ multimodal features- such as video, audio and hyperlinks- as well as interactive tools (Larson, 2009). These tools encourage learning to take forms that accommodate a variety of readers who may find text-to-speech, highlighting, font changes, text size, dictionary features and audio recording of comments to enhance their personal reading style.

### **Technology and Literacy Education**

Technology is changing the way educators think about education and literacy. “Varied digital technologies provide teachers of any content area with numerous approaches to integrating the skills of the 21<sup>st</sup> century” (Pilgrim, Bledsoe, Riley, 2012). One tool to integrate technology in the school environment is the eReader. EReaders have the potential to unveil an array of new teaching and learning possibilities as traditional and new literacy skills are integrated in meaningful ways (Larson, 2010). “However, as with any technological innovation, it is important to look beyond the ‘gee whiz’ technology and examine mobile devices within the context of best practices in Assistive Technology (AT) assessment and implementation” (Newton and Dell, 2011).

For five hundred years, ink-on-paper has defined the business of publishing. It no longer does. We are witnessing and participating in a radical transformation of publishing and the changes taking place are having a profound impact on everybody (Roxburgh, 2012). Because of digital technology, books are available to anyone, anywhere, anytime. EBook popularity in both schools and personal use has not waned. Amazon CEO Jeff Bezos reported that millions own Kindles, which are now relatively affordable at \$149. Roxburgh describes the Amazon Kindle as a “dedicated reading device, providing a single platform accessible across multiple devices and secure, instant access to the world’s largest catalog of titles.”(2012). Due to the unique features of the digital reading devices and the vast array of reading material available, the authors felt that the digital reading devices or eReaders for learning disabled students would be a unique venue to enhance reading improvement. Readers are developing a new relationship with their books. “The eReader is a device almost entirely dedicated to a single function, that of reading long-form text. EReaders such as the Kindle and the Nook do this job very, very well and deserve their own attention, separate from their do anything tablet brethren.” (Griffey, 2012).

EReaders are portable devices that are capable of reading eBooks with low power and high-resolution designed to display versions of paper-based books. In 1998, Nuvo Media released the first hand-held eBook reader, The Rocket, which allowed eBooks to be downloaded from a computer with the use of a cable. Eventually Microsoft and Amazon decided to join forces in 2000 to sell eReaders (Herther, 2008). Subsequently, Sony Reader released their version of a portable e-book device in 2006. Then, in 2007, Amazon released their product, the Kindle, which can be a stand-alone reader or work with computers. This specific product (first generation Kindle) weighed 10.3 ounces and measured 5.3” x 7.5” x 0.7”. With each new generation of eReader the memory/storage, battery/power, user controls, screen resolution and navigation have increased.

After reviewing the Nook, iPad, Sony and the Kindle the authors chose the Kindle for use in the classroom since it has no additional connection fees, is competitively priced, has a built in dictionary and adjustable font size and the Text-to-Speech (TTS) feature, which can enhance

literacy learning for learning disabled students. According to Griffey (2012) “The big three that I focused on in 2010 are still the industry leaders: Amazon, Barnes and Noble, and Sony. .... with Amazon and the various kindle models being the leaders among the general public for eReaders adoption.”

### **Reading Comprehension and Fluency**

The purpose of this article is to address the needs of students with mild disabilities in literacy, specifically, comprehension and fluency. The use of computer-aided instruction has been investigated for quite some time (Horney & Anderson-Inman, 1999; Horton, Lovitt, Givens, & Nelson, 1989; Rhodes and Milby, 2007; Smith and Okolo, 2010). However, research on the effects of using eReaders to enhance comprehension and fluency for learning disabled middle school readers is not prevalent. McClanahan, Williams, Kennedy and Tate (2012) report that they were only able to locate one study by Larson (2010), which reported students using an eReader, specifically the Kindle to read eBooks in the classroom. Larson’s study resulted in deeper comprehension of text but did not involve struggling readers. Studies conducted to determine the reader’s value in helping those with special needs, have traditionally used eReaders displayed on a computer monitor instead of an eReader or tablet computer (Connell, Bayliss, Farmer, 2012).

Kindles have many features that make them attractive to readers. Kindles have a clear and crisp font with high contrast, which is easy for students to read. The text is resizable and is presented on an e-ink screen rather than an LCD screen. Studies have shown that the e-ink screen allows readers to be able to read the device in bright light and sunlight, unlike devices that have LCD screens (Coyle, 2008). Another important feature of the Kindles is the text –to-speech function which is helpful for all readers, but especially for individuals who are dyslexic. One study by Elkind (1998) used the Text-to-Speech software offered by Kindle with middle school students with dyslexia and found that reading comprehension increased in most of the students using the software. As a result the authors asked the question “Would the incorporation of the Kindle’s TTS and other functionalities into specifically designed instructional techniques aimed at specific literacy needs, enhance and improve reading for the learning disabled reader in the areas of fluency and comprehension?” Christopher Harris (2009) proclaimed, “The text-to-speech feature of the new Kindle alone would make the device worth its weight in gold for students who need some added support or motivation for reading.” Yes, digital has its advantages. Multiple books can be read on the same device, adjustable font size, highlighting and note taking customize the reading experience for anyone who chooses to dip their toe into the digital waters, specifically the Kindle eBook (Jonker, 2012).

Reading is a complex and multi-step process of problem solving in which the reader interprets the text rather than just reading the words and sentences on the page (Schoenbach, Greenlead, Cziko, & Hurwitz, 2000). Reading can be defined as rapid, accurate word recognition, and meaning construction. Readers must make connections with words and ideas on a page from prior knowledge or experiences in life to understand the meaning of a passage. Due to the complicated reading process, many readers with disabilities stumble over unfamiliar words. Readers need to learn how to monitor their own understanding of the text by using a variety of strategies to help guide them in the process (Schoenbach et.al. 2000). In order for students to become effective readers they must think beyond the text and draw on personal experiences and

knowledge to make sense of the material they are reading. Students who struggle with reading generally include those with special learning needs, English language learners, standard American English learners, and older students who are disenchanted with learning and have difficulty learning how to translate between printed and oral language (Ambe, 2007). Struggling readers tend to have low achievement, negative emotions and attitudes, are unmotivated and display learned helplessness (Hearn, & McCaslin, 2010). They have shown that some students tend to excel in reading when they have the opportunity to see the words as well as hear them while students with learning disabilities have difficulty decoding print; however, they do not have trouble with oral language. According to Higgins and Raskind (2005), optical character recognition systems that convert printed text to the spoken word might enhance reading comprehension.

Students who are readers with disabilities i.e. struggling readers need to be introduced to new material at a realistic rate with adequate practice time for each skill or strategy. Students who are struggling readers need highly explicit instruction where they are highly engaged and interactive throughout the reading lesson. Furthermore, struggling readers need immediate feedback and help monitoring and correcting their reading errors and misconceptions all of which the Kindle provides for them through its' TTS features. "An integrated eReading support system provides physical, sensory and cognitive support to learners." (Ko, Chiang, Lin, Chen, 2011). Students with disabilities often encounter many difficulties in reading. Struggling readers with the help of an eReader now have choices with instant access to a large number of reading possibilities offered on their reading level without peers knowing what level that may be. Today's students are very familiar with technology and are used to interacting with a variety of devices. They welcome the opportunity to interact digitally with text through the eReader, as they offer the convenience of being able to read anytime, anywhere thus, making assignments easier to accomplish. Learning is no longer one-dimensional but rather offers a variety of methods that enhance learning for the struggling reader. They can access graphs, charts, vocabulary definitions, highlight, change font, listen to the text and take notes as they sit comfortably in a chair or on the floor. One teacher reported that his students quickly experienced success with his Kindle and because the font size was set larger the students appeared to be reading more pages giving them a level of confidence that they had not experienced before.

The use of technology as an instructional tool has many implications for schools and students who struggle with reading. School districts have recently been faced with dramatic budget cuts along with an increase in demand for technology updates in their curriculum. Is the cost of providing updates in technology such as the Kindle an effective use of school district funds?

Research-based practices are now required when considering curriculum innovations. Students with disabilities typically have reading goals on their Individualized Education Plan (IEP). Since there is limited research on the use of cost effective Kindles as an instructional tool, we wanted to investigate the educational value of the Kindle for students with disabilities. We felt that the Kindle could:

1. Improve reading comprehension in students with mild disabilities.
2. Improve fluency in students with mild disabilities.
3. Clarify the benefits of using Kindle's as an instructional tool for students with disabilities.

## *Method*

### **Subjects**

The Kindle Project was conducted with the cooperation of six special education teachers, six student teachers placed in the district and one graduate student. Sixty 5<sup>th</sup> - 8<sup>th</sup> grade learning support students with an Individualized Education Plan (IEP) were selected for this project from a rural school district in Western Pennsylvania. Fifth and sixth graders were housed in a K-6 elementary building and the seventh and eighth graders attended a middle school. All students had reading goals and objectives on their IEP (Individualized Education Plan). Thirty of the students were randomly selected to use the Kindle, while the remaining thirty students were chosen to participate in the control group.

### **Method and Procedure**

Qualitative data was collected for this project. The school district used AIMSweb (Pearson, 2011) to monitor the progress of all students; this data was used to place students in their instructional reading level.

All students read for 30 minutes a day 3 times a week for 12 weeks for a total of 1080 minutes. Reading material included reading content normally read in each of the grade levels. The control group read the material in hard cover books while the experimental group read the same books on the Kindle.

Throughout the project a weekly journal report by the student teachers concerning student use and progress was completed. Student teachers were asked to: (a) assist with Kindle instruction, (b) monitor students during the reading time, and (c) help with technology problems associated with the Kindle. We were interested in finding out the perceptions of student teachers with regard to the Kindle project. Semi-structured interviews were conducted and recorded with students, teachers and student teachers at the conclusion of the project.

In the semi-structured interviews used for the qualitative study, the following questions were used to determine the benefits of the Kindle as an instructional tool:

1. Tell me about your experience with the Kindles?
2. Compare reading with the Kindles to reading with a book?
3. What do you like the best about the Kindle?
4. What did you not like about the Kindle?
5. Do you feel the Kindle helped with reading? How so?
6. Which features of the Kindle did you receive instruction in?
7. How much time did you spend using the tools that you listed in the features for the Kindle?
8. Did you read more with the Kindle than you usually do without one?
9. Did you go online to buy and download books?
10. Technically, was it challenging to work with the Kindle?

### *Results*

The test results for the 60 students with learning disabilities over twelve weeks were obtained from the AIMSweb (Pearson 2011) Data indicated that fluency in sixth, seventh, and eighth grade improved while fifth grade did not show any improvement.

Results from the AIMSweb data indicated that reading comprehension improved for fifth and sixth graders but no improvement in comprehension was noted for seventh and eighth graders over the twelve week period.



Student Teachers working with students who used Kindles.

### *Qualitative Results*

#### **Student, Teacher, and Student Teacher Interviews**

Journal keeping for experience sharing and semi-structured interviews for sharing follow-up question and answers were used in this project. Semi-structured interviews were conducted to identify emerging themes about the perspectives of the students, teachers and student teachers during and after the completion of the project. The information from the interviews was recorded, transcribed and reviewed. The journal reports and interviews were an essential source of information that provided insight concerning human perceptions and interactions. The interviews were done to assess the Kindle as an instructional tool.

## **Students**

All students responded to the questions on the questionnaire listed previously in this article. The questionnaire was completed in the students' classroom. Students were informed about the purpose of the project before answering the questions.

## **Student Teachers**

Student teachers were interviewed at a day and time that coursework at the College was scheduled. All interviews were typed verbatim by a graduate student. Student teachers were reminded of the purpose of the project and answered all questions.

## **Teachers**

All teachers were interviewed at a day and time convenient for each teacher. All six of the participating teachers were certified in special education and worked with the students in the project who were in grades five through eight. All interviews took approximately 30 minutes and were conducted in a classroom of the school during a free time for the teacher.

The authors feel that the information obtained in this part of the project had particular significance for future use of the Kindle with struggling readers. Inter-rater reliability was used to determine themes and to provide organizational framework. Once the chunks were identified the information gathered was put into meaningful themes.

## **Themes**

Five themes emerged from the semi-structured interviews of the students, student teachers, and teachers: (a) experience, (b) settings/structures, (c) features, (d) motivation, and (e) technology

### *Experience*

#### **Students**

Generally students in the experimental group had no previous experience with a Kindle. Students using the Kindles were provided instruction in how to use the (a) speech to text feature, (b) how to use the dictionary, (c) how to increase the font or the text, and of course (d) how to turn it on and off and advance to the next page.

Having been introduced to the device through the project they liked it as a gadget, "It's a very nice portable item" and they liked reading from it "I liked it and kept reading it every day". Some students discussed additional reading at home with the device as well as enjoying multiple books they liked on the device. One of the students was very reserved towards the idea of reading with the Kindle "I hated the idea of the Kindle until we put books on it which I liked and then I loved it".

The interviews suggest students may need more time with instruction and more time to get familiar with all of the features. One student reported, "I got scared when it wouldn't turn on. Once I started using it, it wasn't confusing anymore".

### **Student Teachers**

The student teachers reported that their experiences with the Kindle were positive since this technology appealed to the students. The student teachers felt they still liked to read with a book but, the elementary and middle school students were inclined to find the Kindle more appealing for reading.

### **Teachers**

Generally teachers involved with the Kindle Project had no previous experience with a Kindle. Teachers were given the Kindles a week prior to the start of the study and would have preferred additional time to “play” with the Kindles. The lack of prior experience by the teachers may have led to frustration when mechanical problems surfaced.



Settings and Structures

### **Students**

The students reported that they liked the “gadget” aspect of the Kindle “that you can take it anywhere such as a park or something”, the fact that a gadget can hold a number of different books “all the possible books you can get and that it had a computer and book all in one”.

Playing with buttons is apparently an appealing aspect to a fifth grader “I liked how when you would make it speak, you could press the spacebar to make it pause”. One of the students loaded music onto the Kindle and listened to it while reading, “I liked the music that I could put on my Kindle”.



## **Student Teachers**

The student teachers were responsible for overseeing the use of the Kindles and did not feel that the setting or the structure was particularly an issue. They were placed in these settings for their student teaching and felt that the project enhanced their resume and ability to obtain a teaching job.

## **Teachers**

Fifth and sixth grade teachers varied in the amount of time spent providing instruction to use the Kindle features. Some of the fifth and sixth grade students received 45 minutes of instruction and others received up to three days of instruction on how to use the Kindle. Seventh and eighth grade teachers also reported a variation in the amount of time spent teaching students with disabilities the Kindle features. Seventh and eighth grade students received one to two class periods of instruction on how to use the Kindle. Generally, teachers indicated more instructional time was needed. It was reported that often times Middle School students do not like to ask questions if they don't understand.

Fifth and sixth grade teachers used the RTI (Response to Intervention) designated time (first 30 minutes of each school day) to have students with disabilities involved in the Kindle project. Students with disabilities involved in the project read for a minimum of 30 minutes three times a week. Grade seven and eight assigned study hall times for students with disabilities in the Kindle Project to read for 30 minutes three times a week.

The middle school setting was problematic. Students were supposed to read for thirty minutes during their study hall; too often students worked on homework assignments and "saved" the Kindle reading for last. We found students frequently did not read for 30 minutes three times a week. Teachers were not emphatic about making sure the reading time was part of the study hall.

## *Features*

### **Students**

Two features named most often by the students were the text-to-speech (t2s) and the dictionary. Other features of the Kindle that were named were the bookmarking and clipping features. The t2s feature had comments such as "It can read to you, too", "It scared me and sounded like a robot, but I still liked how you could have the book read to you".

Students mentioned several advantages to the Kindle such as the ability to have hundreds of books on the device and the ability to download books at any time. They also liked being able to manipulate the font size and thought the text-to-speech feature was advantageous for students with dyslexia.

Most of the students stated they really liked the features of the Kindles. Several weaknesses were mentioned: (a) no backlight, (b) the monotone voice on the text-to-speech feature, (c) the black and white screen, and (d) the Kindle needed to be charged. A student said, "Didn't like that it was boring and black and white".

Features often mentioned during the interviews included: (a) ability to download books they don't normally have access to, (b) inability to download some desired books, and (c) books are less expensive.

With regard to the text-to-speech (t2s) feature a student mentioned, "After a while I became bored with it and I barely used it anymore". Another student mentioned his learning preference; "I liked reading the Kindle better because it could read to you, and I can understand more when people read to me".

Several students referred to the search feature as being unique..."[in] a Kindle you can do stuff like type and look up words" and "If you do not know the definition of a word you can look it up and it will read to you".

### **Student Teachers**

The student teachers reported that the most used feature was the t2s which did use a great deal of battery life. The other features that they described to be used the most were the font size and the dictionary and bookmark features cited by both the teachers and the students. They noted that the students had difficulty remembering the process for accessing the features. The student teachers felt that continued use and possibly a process list for access to important features would help the students remember the process.

### **Teachers**

Teachers mentioned several advantages to the Kindle such as the ability to have hundreds of books on the device and the ability to download books at any time. They also liked being able to manipulate the font size and thought the text-to-speech feature was advantageous for students with dyslexia. All teachers thought the technology enhanced learning and was motivational.

Teachers indicated that (a) text-to-speech (t2s), (b) dictionary, and (c) bookmarks were taught to the students. Some students with disabilities required one on one instruction.

Teachers reported several mechanical problems with the Kindle such as (a) the Kindle would often shut off or not turn on, in fact several Kindles had to be replaced and (b) the tinny sound of the voice on the text-to speech was robotic and hard to follow. Other issues mentioned were the inability to find and download books that were being used in the classroom and the lack of color.

Most of the teachers downloaded books or had the student teachers download books. Several teachers downloaded a whole series such as Nancy Drew or The Magic Tree House books.

The teachers discussed the special advantages to the Kindle such as the ability to have hundreds of books on the device and the ability to download books at any time. They also liked being able to manipulate the font size and thought the t2s, dictionary and bookmarks as the primary features in use. Teachers reported several mechanical problems with the Kindle such as the tinny sound of the voice on the t2s were robotic and hard to follow.



### *Motivation*

#### **Students**

Some of the students reported they felt the reading with the Kindle improved their reading. One generally felt his reading improved "...it's the only thing that really helped me" while others were more specific "It helped me with my fluency". "My fluency, I think, is faster," or "It helped me pronounce words because I hear the guy say it". On the other hand some of them did not feel that the Kindle helped their reading "No not really, I was already a great reader".

One student remarked, "I took Accelerated Reader tests when I read the books and I didn't pass. Now since I've been taking the Accelerated Reader tests and using the Kindle, I am getting better scores". Another student remarked, "Yeah, because when my Kindle was broken, I had to read normal books, and I could read them faster than I used to". Several of the students felt they were able to read faster and that their comprehension had improved due to their use of the dictionary feature.

#### **Student Teachers**

Four of the student teachers reported the students were reading more than they had in the past; they requested additional books and read in their free time.

## **Teachers**

The majority of the teachers reported that students with disabilities read more with Kindles. Because of the project, three of the students have purchased Kindles for personal use. Teachers reported several indicators that students were able to comprehend the reading.

1. Students were reading more for pleasure.
2. Students were engaged in conversations with teachers about the book, this conversation often stimulated other students to read the book being discussed.
3. Teachers believed that students with dyslexia benefitted the most because of the t2s feature of the Kindle.

The novelty of using technology to read was a motivation for students. Students responded well to features that allowed them to read vertically or horizontally. Teachers reported about half of the students liked the text-to-speech feature and other students did not like the robotic tone of the voice. The dictionary feature permitted students to highlight a word and see the definition right away. This feature was widely used.

Teachers also felt the Kindle helped their students reading ability. One student read 10 chapter books during the study and prior to the study had not completed any chapter books in class. The Accelerated Reader scores indicated the student comprehended the reading material and passed each one with 70% or higher. Another teacher reported a student was asked a vocabulary word from a new novel they were reading in class. He stated the definition of the word and was asked how he knew what it meant. He said he came across the word while using the Kindle and looked it up.

A teacher reported one middle school student with disabilities liked the idea of carrying the Kindle around as he changed classes; perhaps this was an unintended benefit of the Kindle project, the ability to boost self-esteem!

The majority of teachers involved in the study reported students with disabilities read more with the Kindle. A seventh grade teacher reported when a mechanical issue popped up a student became frustrated and stopped using the Kindle. However, teachers felt that students who were readers read more because of the study; three students have purchased Kindles for personal use.

Several indicators that students were able to comprehend the reading were revealed in the teacher interviews. Students were reading more for pleasure. Students engaged in conversations with teachers about the book, this conversation often stimulated other students to pull the book off the shelf. Teachers believed students with dyslexia benefitted the most because of the text-to-speech feature of the Kindle.

## ***Technology***

### **Students**

It seems that technically the Kindle did not challenge the students “it was easy for me; I found it easy; easy to learn; never a problem with technology.” Many of them did not find it challenging to learn the technology but were frustrated with any malfunctions such as freezing and loss of

use. At the beginning of the project several devices had to be returned to the company for replacement. For some of the students, handling the Kindle was confusing at first but eventually all of them got the hang of it and said that “Once I started using it, it was not confusing anymore,” or “At first a little bit, but after the third day using it I was able to fly through it without any problems.”

Once students became familiar with how to use the Kindle, they typically found the technology easy to navigate. One student responded, “Fun and a good reading.” “The Kindles I think were great to read with if you don’t like reading with books because you don’t get paper cuts.” Another student commented, “Sometimes my Kindle had issues, but I liked it a lot. It helps me read better.” Students reported frustration with malfunctioning Kindles, “The battery dying is the only technology feature that was messed up” and “How many times it would freeze, and how you would try to charge it and it would stay on the charging screen and how it would take forever to turn on.”

One of the middle school students had a Kindle that continued to take the student back to the beginning of the book and lost her page number. The student was so frustrated; she refused to use the Kindle for over a month after it was repaired.

### **Student Teachers**

The student teachers reported that they did not have trouble learning how to use the Kindle, but were still interested in reading with a book rather than the Kindle. They felt the students however, really liked the technology of using the Kindle for reading.

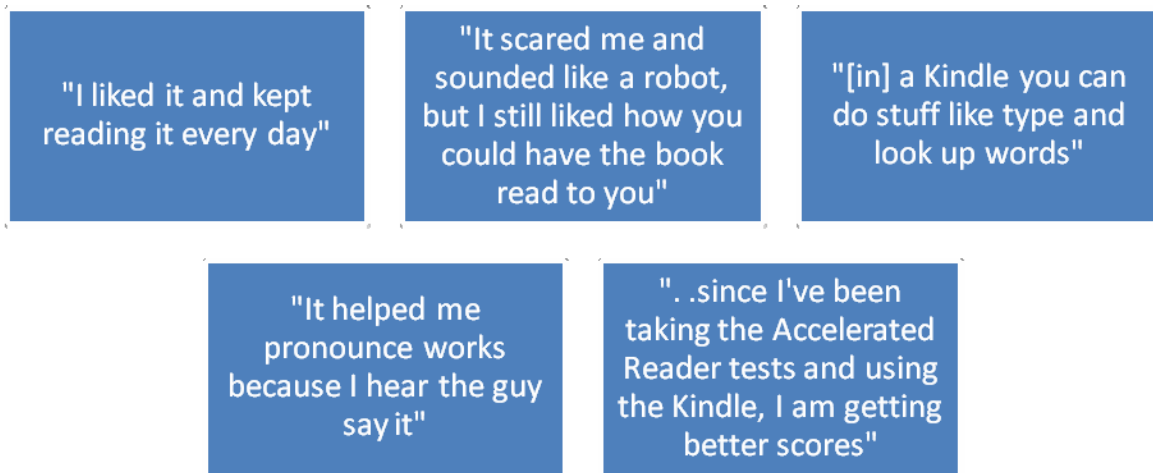
### **Teachers**

All of the teachers involved in the study felt the Kindle was a valuable tool for struggling readers. Teachers indicated that more training prior to the start of the project would have been helpful and may have avoided many of the mechanical issues with the Kindle. An interesting point was that one of the teachers who did not have any mechanical issues indicated he had read the entire manual provided to the teachers with the device prior to beginning his work with the Kindle!

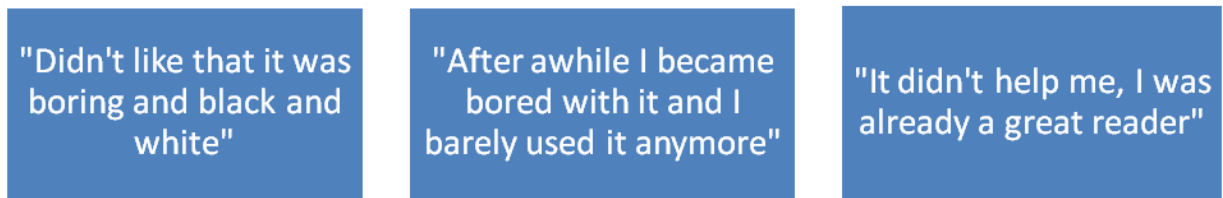
In conclusion, the authors felt that even though the quantitative results showed marginal growth in fluency and comprehension over the twelve weeks of the project, the qualitative results indicated there was promise in engaging students with the Kindle to improve comprehension and fluency over time. The additional use of the text-to-speech, dictionary, and time spent reading should over time improve struggling reader’s chances to be able to participate more fully in the academic, literacy setting.

## *Student Comments*

### *Positive Comments*



### *Negative Comments*



## *Implications for the Future*

"A reader must advance from word recognition skills to academic learning and then to the social and cultural interpretations of texts" (Palumbo and Sanacore, 2009). As we work with readers with learning disabilities, professionals strive to find a tool that will enhance student understanding of the material. Ultimately a transfer of enhanced learning to academic subjects will benefit learners.

Students' personal life may be the most difficult challenge that professionals have in teaching reading to struggling readers. According to Maslow, when an individual does not have their basic needs met, it is difficult to learn.

## *Limitations*

Several implications for improving this Kindle Project and enhancing student learning should be considered.

1. Start small and work with only one educational level of special education students. This means you work primarily with the elementary students, or middle school students. If you attempt to work across the above levels when introducing the Kindle, details that work for one educational level will not work well for another level. Naturally, reading instruction is delivered differently in the elementary school than in the middle school. Schedule variations such as start and dismissal times, lunch, and study hall or designated RTI time all had an impact on how the project was delivered at each level. We found using the Kindle with multiple grade levels across educational levels created some unforeseen problems.
2. Use professional development to introduce the teachers to the use and potential of the Kindle in the classroom. Important feedback from the teachers of this project indicated they wanted more professional development with the Kindle. Many would have liked their own Kindle for classroom use as well.
3. The freedom of choice and enthusiasm for the technology is contagious. The buy-in to the importance of the technology use in the classroom is paramount to program success.
4. The introduction of Kindles in the classroom works best when there is a designated lead that owns the project and has the authority as well as the responsibility to follow through on the project. There should be a long term roll out plan agreed to by all involved. With a training strategy in place and related supplies in the classroom before the students receive their Kindles.
5. Have lots of Kindle availability. Have enough Kindles for all who want to use them or develop a rotation system for everyone to get a chance to use them.

We endorse the Kindle as an instructional tool. This project demonstrated the benefits of Kindle use and several cautions for the improvement of comprehension and fluency for the student with mild disabilities. However, for financial and practical reasons we acknowledge the importance of print chapter books in the classroom.

Kindles help special education students soar beyond their expectations, bring excitement to learning and transfer new found skills to academic learning. When you are a witness to this type of student enthusiasm for literacy you feel the elusive love of literacy for these students has suddenly become more concrete.

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**Appendix A**  
**Book List for Kindle Project**

5<sup>th</sup> and 6<sup>th</sup> Grade

1. Cleary, Beverly, **Ramona Quimby, Age Eight**
2. DeClements, Barthe. **Nothing's Fair in Fifth Grade.**
3. Howe, Deborah and James. **Bunnica: A Rabbit Tale of Mystery.**
4. Paterson, Katherine. **The Bridge to Terabithia**
5. Rockwell, Thomas. **How to Eat Fried Worms**
6. Taylor, Mildred. **Roll of Thunder, Hear My Cry.**

7<sup>th</sup> and 8<sup>th</sup> Grade

1. Auch, Mary Jane. **Ashes of Roses.**
2. Bauer, Joan. **Hope Was Here.**
3. Bruchac, Joseph. **Code Talker.**
4. Budhos, Marina. **Ask Me No Questions.**
5. Farley, Walter. **The Black Stallion.**
6. Hunt, Irene. **Up the Road Slowly.**