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GOING PAPERLESS: STUDENT AND PARENT PERCEPTIONS OF iPADS IN THE CLASSROOM

Thesis Abstract

The classroom of today is digital; districts around the world are putting devices into the hands of each child. The Emerald Union School District is among those districts who have recently piloted a one-to-one iPad program in several of their grades 3-6 classrooms. This study was conducted in order to determine the perceptions of students and parents regarding the newly implemented iPad program. More specifically, this qualitative study surveyed fourth grade students and their parents in an effort to determine their perceptions of the iPad in relation to student motivation and learning. Further, the researcher looked to examine the relationship between motivation and learning. Results from the student survey suggest students perceive the iPad as an essential tool, contributing to their motivation and learning in school. Results from the parent survey indicate parents perceive the iPad as being a highly motivating tool for their student’s learning. In contrast to student’s perception however, parents were less inclined to see the iPad as an essential tool to their child’s education, rather suggesting that while parents feel technology is important they do not see the iPad as the necessary tool for their child’s education.

Further study is needed in order to investigate the relationship between student motivation and learning. Additionally, the researcher suggests school districts, such as the Emerald School District, provide more parent education on the educational benefits and opportunity of the iPad in the classroom.
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Chapter 1: Introduction

In this day and age we have knowledge at our fingertips. Anything you want to know more about can quickly be found with a few quick finger strokes. Technology is quickly emerging as an ever present, ever changing constant in our world. Our young kids today will never know life without a laptop, smart phone, or iPad. It is amazing how far technology has come over the last decade. Whether we like it or not technology has changed the way we work, interact with others, and live our daily lives. Therefore, it seems fitting that new technology is quickly making its way into the education sector. While a small set of personal computers in a classroom seems to be a thing of the past, many school districts throughout the world are investing in personal hand-held devices for their students. Laptops, iPods, Kindles, and iPads are just a few of the one-to-one devices that schools are purchasing for student consumption. “In addition to viewing these devices as mechanisms to encourage the development of technology skills, proponents have seen the integration of handheld computers as a pathway to increase student learning and achievement” (Banister, 2010 p.122).

Background

In school districts throughout the world, the Apple iPad is becoming the primary education tool for K-12 students. Emerald is not unlike many other school districts who recently purchased iPads for their classrooms in the last few years. In fact, “between October and December 2011, Apple sold 15.4 million iPads,” according to the company. That’s up 111 percent from the 7.33 million iPads sold during the same period in 2010” (Garcia, 2012). The iPad has proved to be a breakthrough device unlike any other. In an
effort to understand the significance of the iPad in education, it is important to first understand the technical side of what the iPad actually is.

“Released in April 2010, the iPad is a tablet computer, which uses a touch-sensitive screen, allowing users to control the device with their finger(s). The iPad has a 9.7-inch (diagonal) screen that displays 1024-by-768-pixel resolution at 132 pixels per inch. The data capacity is 16GB, 32GB or 64GB. The iPad’s battery life is up to 10 hours. The iPad comes in two main versions: a Wi-Fi (802.11a/b/g/n) only model and; a Wi-Fi plus 3G (mobile phone connection) model. The iPad is the newest member of the iOS family of devices that also includes the iPod Touch and iPhone. One of the most important developments that accompanied the release of the iPhone was the concept of iApps and the App Store. iApps are software programmes (sic) designed to run on the iPhone, the iPod Touch, and now the iPad. iApps are downloaded from the online App Store. iApps can either be bought or are free. There are currently over 250,000 iApps for the iPhone and iPod Touch and, as a result of this huge number of products, there are iApps for every category of use. There are a further 25,000 iApps for the iPad. These iApps have proved to be very popular and as of 1 September 2010, iApps have been downloaded 6.5 billion times” (Ireland, Woollerton, 2011, p.35).

Emerald Union School District was among the millions who purchased the iPad shortly after its 2010 release. In 2010, the City of Emerald passed Proposition P. This proposition extended a previously passed school bond. The passage of this extension, assured that the nine elementary schools in the Emerald Union School District would be provided with 21st century classrooms, have energy efficient schools, and would have upgraded and renovated facilities. Over the course of 30 years the bond will raise $44 million for the district. After the passage of Proposition P, the school district began the initial roll out of the iPads. One grade-level from each of the nine elementary schools was selected to pilot a class set of iPads with their students. Teacher participants received their iPads in the summer of 2011, while most students received their iPads during the Fall of the following school year. I was one of the teachers selected to pilot the one-to-one iPad program in Emerald. Each of the four, fourth-grade teachers in my grade-level, along with
each of the approximately 120 4th grade students received an Apple iPad. As proponents of the new pilot program we began the school year very excited, but also unsure about how this new technology would impact our teaching. There were many unknowns, both for the school district and for ourselves. With little professional development, it was up to our grade-level to work together to utilize the devices as we best saw fit for our classroom.

**Statement of the Problem and Purpose of the Study**

Although there have been millions of iPads sold over the last two years, it is important to remember that the iPad is still in the very beginning stages of its existence. Therefore, much remains to be learned about the benefits and potential risks of the iPad in education. There has been some research to support the notion that one-to-one devices can be highly motivating for students. However, there has also been evidence, which suggests one-to-one devices, while motivating to some students, have little to no effect on improving student’s learning. Many past studies have focused on one-to-one devices such as laptops, iPods, and mp3’s, just to name a few. Because the iPad is only two years old, there have been a limited number of studies conducted regarding their place in the education world. While districts continue to spend millions of dollars purchasing these devices, it remains to be seen whether or not they truly are now a necessity for student learning. Having used the iPads with my students since November 2012, I have seen many benefits to incorporating the device into my daily instruction. Although, the students seem to enjoy using the device, and engagement is generally very high, I do wonder how students and parents perceive the iPad as a tool in the classroom.

**Research Questions**

My research study will focus on answering the following research questions:
1. Do students view the iPad as a motivating factor to their learning?
2. Do students view the iPad as an essential and beneficial tool for their learning?
3. Do parents view the iPad as a valuable learning and motivational tool, essential to their students learning?
4. Is there a cause/effect relationship between the iPad as a tool for motivation and learning?

Hypothesis

Based on my own experience with iPads in my 4th the classroom, as well as previous research conducted in this area, I have developed the following hypothesis for this study.

1. Students view the iPad as a highly motivating factor to their learning.
2. Students view the iPad as an essential and beneficial tool for their learning
3. Parents view the iPad as a highly motivating tool for their students learning.
4. Parents view the iPad as a tool somewhat essential to their students learning.
5. There is a cause/effect relationship between motivation and learning. Student’s who feel more motivated, also feel the iPad assists with their learning.

Definition of terms
1. **Accelerated Reader (AR)**- On-line reading progress and motoring application. Software allows students to determine their reading level, take reading comprehension quizzes, and vocabulary quizzes on books of their choice. Teachers have access to student progress reports. (License required)

2. **Edmodo**- Social networking site for students and teachers. Allow teachers to post assignments, quizzes, and take polls. Students may hold discussions, post assignments, and have instant access to their grades. Parents are able to monitor their child’s progress via a login in specific to their child. (Free)

3. **Explain everything**- Allows users to annotate, animate, and narrate presentations or explanations. May be used as an interactive whiteboard for teacher or student presentations. (Free)

4. **Flashcards (SAS)**- This free app allows teachers to create flashcards on any given subject to share with students via their one-to-one device. Students also have access to previously created flashcards on a variety of subjects.

5. **Garage band**- Allows users to play virtual instruments (piano, drums, guitar, etc.) with multi-touch gestures. Users may create and share music. ($4.99)

6. **IXL (math)**- Gives students access to unlimited math practice, covering math standards in Pre-K-8th grade. Tracks student progress, and reviews concepts students have not yet mastered. Teachers have access to student progress and reports. (Requires License)

7. **iBooks**- Application that allows users to download books directly onto their iPad or iPhone. A few of the many features allow users to highlight, make notes, and click on a word for an instant definition. (Free)

8. **Keynote**- Presentation app, allows users to create presentations, which may include animation, transitions, and charts and graphs. ($9.99)

9. **Khan Academy**- Gives students’ access to thousands of video tutorials on various K-12 subject matter. Capable of tracking student progress and providing individual practice for users. (Free)

10. **Notes**- Virtual spiral notebook, allowing users to type notes via their mobile device. (Free)

11. **Pages**- Word processor for the iPhone and iPad, allowing users to write, edit, save, and share documents. ($9.99)

12. **Planets**- Provides both 3-D and 2-D views of the sky and globe. Reports on current visibility to find out when the planets will be visible.

13. **Quarrel**- Word game available on the iPhone or iPad. (Free)

14. **Safari**- Web browser (Free)

15. **Science 360**- Content provided by the National Science Foundation (NCF) gives users access to the latest news in Science, provides video streaming, and images in many areas. (Free)
16. **Sketchbook (Express)** - Drawing application, giving users the ability to sketch, doodle, or use brushes and other tools. Users may also incorporate images and text. (Free)

17. **Tap typing (typing trainer)** - Typing program intended to help users practice typing on their mobile device. Provides speed tests, and sample lessons. (Free)

18. **Tap quiz maps** - Geography game, helping users to master all of the countries of the world. Users may play by specific region and track their progress. (Free)

19. **Tinkerbox** - Physics and puzzle game, teaching basic engineering concepts. (Free)

20. **iMovie** - allows users to create trailers and movies, with sound effects, images, soundtracks, and more. ($4.99)

21. **One to one** - refers to a classroom in which students are provided their own personal computing device (i.e. the iPad).

22. **Apps** - computer software designed to help users preform specific tasks.

23. **Project-Based Learning** - a teaching technique in which students learn through in-depth projects (both individual and group). This teaching technique promotes collaboration, problem solving, research skills, and creativity.

**Conclusion**

Technology, specifically, one-to-one devices, in schools are quickly emerging as instructional tools in districts throughout the world. There is no doubt that technology in schools is here to stay. With districts spending thousands of dollars on new technology each year, it is important to understand the effects, both good and bad this new technology is having on students. This study will look to further examine the perceptions of students in relation to motivation and learning with their iPad as an educational tool. Further, this study will examine parent perception, in relation to the iPad as an educational and motivational tool for their child’s education. A review of the literature related to iPads, student engagement, student achievement with one-to-one devices, project-based learning, and barriers will be discussed in Chapter 2.
Chapter 2: Review of Literature

While not an entirely new addition to the education system, technology in schools is quickly expanding its role from that of a secondary tool, to the primary resource for teachers and students. As new technology has emerged at such an accelerated rate education has fought to keep up with the newest and best tools for students. However, because technology is continually and quickly changing there has been limited research on its effects for student learning. More specifically, the iPad has emerged as one of the newest and most widespread tools for one-to-one computing in schools. School districts around the world are choosing to purchase the iPad for their students, in an effort to give students a better educational experience. The purpose of this chapter is to examine the past and most current research dealing with one-to-one computing devices, and their role in education.

iPad in Education

As the iPad has begun to find its place in many K-12 districts around the world, more discussion has emerged among teachers, administrators, students, and parents regarding the effects both positive and negative to children’s education. In 2010, with the passage of a bond measure, Proposition P, the Emerald Union School District was allocated 44.2 million dollars to upgrade computers, technology, and facilities. With the passage of this bond, in the 2011-2012 school year Emerald began an iPad pilot program, where a class set of iPads was purchased for one grade-level per school, in the nine elementary schools. Encinitas was one district among many who were frontiers in putting this new technology into the hands of their students. In his New York Times article, Hu,
(2011) points out the fact that many districts are paying for iPads through federal and other grants. Further, according to a 2011 publication in *Education Week*, “Everyday seems to offer another story about a district or school that’s buying iPads” (Quillen, 2011, p. 2). Virginia, Chicago, and Irving, Texas are just a few of the many districts who have begun weaving the iPad or another tablet-computing device into their district’s school program. In his article, Quillen sites one of the reasons for educational interest. “With a battery life of eight to 10 hours and a weight of just over a pound, the iPad offers more portability and less startup time during the full school day than laptops or netbooks, while its screen size facilitates more flexibility using the Web and easier input than smartphones” (2011, p. 2).

**Student Engagement**

While the research regarding iPad’s in the K-12 classroom is still relatively new, there have been recent studies, which have suggested that the iPad, or more often in the research one-to-one student laptops, as highly engaging to learners. Shepperd’s study (2011), explored how features of an electronic book would make a difference to the level of student engagement, and if this would improve student understanding of text. The participants included 43-year six students from two different classes. While one class read a traditional book, the other class read the same book on the iPad. The two classes then reversed these roles. Using both formal and informal assessment, results from this study revealed student scores to be lower when using the iPad versus a traditional book. Other comprehension assessments revealed, “Almost two-thirds of the students recorded negative or no growth when using the iPad” (2011, Shepperd, p. 3). However, results from the study did reveal reading on the iPad to be highly engaging for students. Results from this
study raise the question of the relationship between motivation and learning. In the case of the above study there was no correlation between the two. However, many districts are citing student motivation as one of the key reasons to support the purchase of these one-to-one devices. In a 2010-2011 survey study, conducted by *Project Tomorrow*, researchers used convenience sampling to survey thousands of K-12 students, parents, teachers, librarians, administrators, and technology leaders, in both public and private schools, in the United States. Their research focused on emerging technology, and raised questions about what technology and school might look like for our students in the year 2015. One of their findings suggested, “A majority of administrators, teachers, and parents agree that the most significant benefit of using mobile devices within instruction is the potential to increase student engagement in the learning process” (2011, p. 6). Middle school students who had participated in an on-line class reported positive feelings about the online classroom. Stating such things as, “getting help from the teacher, being more comfortable asking questions in class, becoming more personally motivated to learn the subject matter, and being able to share ideas with other students” (2011, p. 8) as reasons why they placed a high value on on-line learning.

Before the introduction of the iPad, many districts used laptops as a one-to-one program for student learning. Li’s 2007 study in Canada used a mixed method approach to collect data from 15 secondary math and science teachers, and 450 secondary students. The study looked to explore students’ and teachers’ perceptions about technology integration in school. The study revealed that, in general, students held much more positive attitudes toward technology than teachers. The majority of students found technology useful and effective to their learning. More then 18% of students surveyed in
this study cited enjoyment of learning and confidence in their ability as to why they found technology useful. “Many students emphasized using games or other fun ways, from virtual reality to simulation and to the Internet” (Li, 2007, p. 387). Student responses from the survey include such comments as,

- Technology is effective for learning because it is something new for students to do or see. It's a different way of learning that's usually fun for everyone. (p. 387).
- Technology is WAY better than the teacher because you learn at your own pace [sic] and it is extremely funner [sic]. School is usually boring (p. 387).
- [Technology] is hands on and it's interesting to me. I can learn more if I learn it that way” (p. 387).

Other studies involving the implication of one-to-one devices in K-12 schools suggest similar findings related to student engagement. In Young, Mullen, and Stuve’s study (2005), the researchers explored the use of PDA’s in a Kindergarten classroom. Through observation, interviews and videotaped lessons the researchers specifically looked at whether or not PDA’s hold the pedagogical advantages over conventional notions of computing forms for certain age groups. Results from their study indicated that the Kindergarten students were highly interested and on task while manipulating their Palm OS 5’s. The students expressed excitement as the explored. Researchers concluded that PDA’s were able to capture students’ attention, and while they relied on the adult for overall guidance, children took an active stance to initiate their own selection and inquiry (Young, Mullen & Stuve, 2005). Researchers observed,
All four children were highly interested and on task while manipulating the Palm. The children expressed excitement as they explored, and most articulated a desire to work for a longer time. Interestingly, both boys showed interest in playing games while the two girls did not. (2005, Young, Mullen & Stuve, p.1)

Past research indicates that, the use of one-to-one computing devices can be highly engaging to students of all age groups. However, there remains a discrepancy between student motivation and student learning. Which raises the question of the importance of motivation in relation to learning?

**One-to-one devices and student achievement**

While much research has supported the element of student motivation with the use of one-to-one devices, there have been mixed findings in the area of student achievement. In a 2011 study, Constant sought to gauge the perceptions of parents, teachers, and students, regarding the effectiveness and use of on-to-one laptops in the classroom environment. More specifically, he looked to explore the perceptions of parents, students, and teachers concerning the positive or negative effect of laptops on quarterly grade averages across content areas. Interestingly, the results of his study suggested that math teachers perceived laptop use as having a negative impact on their student’s quarterly grades. While language arts, social studies, and science teachers perceived laptops as having a neutral effect on grade averages. Both parent and student groups surveyed in this study, also perceived laptops as having no effect on quarterly grade point averages (Constant, 2011). In a 2010-2011 survey study, conducted by *Project Tomorrow*, researchers used convenience sampling to survey thousands of K-12 students, parents, teachers, librarians, administrators, and technology leaders, in both public and private schools, in the United States. Data from this national report suggests, “In their ultimate
school, students see using mobile devices to both increase the effectiveness of their learning process, and also provide expanded opportunities for learning” (2011, p. 5).

Researchers in this study also found parents are,

> Searching for high quality computer-based games, websites and on-line classes for their children. And when seeking such tools, parents are most interested in ensuring that these products are aligned to sound educational goals. The level of their child’s engagement is still important for the parents, but so is the educational content supporting the experience or interaction. (2011, p. 13)

While both Constant’s study, and the Project Tomorrow survey used qualitative data, and focused solely on the perceptions of students, teachers, and parents, other studies have looked at quantitative data to examine the effect one-to-one devices have on student achievement. Gulek and Demirtas collected quantitative data from students at Harvest Middle School. Data included students’ overall cumulative GPA’s, end of course grades, district writing assessment scores, and standardized test scores. The results of the study indicated that students who participated in the laptop program earned significantly higher test scores in writing, English-language arts, mathematics, and overall GPA’s than students who did not participate in the one-to-one laptop program. As illustrated by students STAR California Standards English-Language Arts and Math test scores, students participating in the laptop program, scored at a percentage, either proficient or advanced, much more significantly than those students who did not participate. For example, of the students in grade six who participated in the laptop program, 80% (ELA) and 86%(Math) scored proficient or advanced. In contrast, of the students in grade six who did not participate in the laptop program, 66% (ELA), and 68% (Math) scored proficient or advanced. While there was a significant gap in the student achievement in this study, other such studies have revealed conflicting data. Miranda, Williams-Rossi, Johnson, and
McKensie, used a mixed method form of research to explore the student achievement of struggling middle-school students who used an electronic reader. Results from their study indicated that the use of e-readers yielded no difference in reading improvement. However, researchers did find that boy’s attitudes toward reading might change positively with the use of an e-reader (they did not see a change in girls attitudes). The researchers noted, “It is possible that the novelty of the e-readers and the notion of being involved in a research study may have influenced the students to appear to like the e-readers and become more engaged in reading (2011, Miranda, Williams-Rossi, Johnson & McKensie, p. 88). While quantitative data in this study revealed no significant difference, there was evidence that the e-readers had provided, to some degree, student engagement and possibly motivation. Further research is needed to see whether student perception of learning versus actual learning is correlated.

Project-Based Learning

With the emergence of one-to-one devices, such as the iPad, the role of the classroom teacher is beginning to change. Today’s classroom is less teacher centered, and more student centered. In a one-to-one classroom students are more easily able to access information on their own, without teacher assistance. Because of this, many schools and districts have adopted a teaching style, centered on student projects, allowing students to work in small groups to discover information on their own, with little teacher intervention. “In Project-Based Learning, the project is the central teaching strategy; students encounter and learn the central concepts of the discipline via the project” (Thomas, 2000, p. 3). Further,

Project-based learning projects are not, in the main, teacher-led, scripted, or
Project-based learning projects do not end up at a predetermined outcome or take predetermined paths. Project-based learning projects incorporate a good deal more student autonomy, choice, unsupervised work time and responsibility than traditional instruction and traditional projects (Thomas, p. 4).

The use of one-to-one devices assists with this teaching style, allowing students to have instant access to information, whereas students can now rely not only on their teacher for information, but also their mobile device. Previous studies have supported this teaching style, and its benefits to student learning. A study looking at Project-based learning in primary schools found, “All pupils evaluated positively the learning procedure and the activities during the Project-based learning and felt they were able to understand better compared to learning only from their textbooks” (Stavroula, 2011, p. 43). The project approach allows students to discover information on their own, versus the traditional method of teaching, where students are told the information. According to his review of research on Project-based learning Thomas notes, “There is direct and indirect evidence, both from students and teachers that Project-based learning is a more popular method of instruction than traditional methods. Additionally, students and teachers both believe that Project-based learning is beneficial and effective as an instructional method” (2000, p. 34). Thomas also found however,

There is some evidence that students have difficulties benefiting from self-directed situations, especially in complex projects. Chief among these difficulties are those associated with initiating inquiry, directing investigations, managing time, and using technology productively. (2000, p. 34)

Project-based learning is a new approach to both teaching and learning. In other words, this methodology is new for both teachers and students. This study looks to further understand the perceptions of students and parents as they are immersed in this new way of learning.
Barriers

With change often come unseen obstacles. The introduction of new one-to-one devices has revealed barriers for teachers, students, and parents. Do the positive learning and motivational factors of the devices outweigh the barriers? In their Education Weekly article, Oehlkers and DiDonato ask, “as we look forward to another great leap in education, fueled by the iBook and tablets, is whether these devices, like those that have preceded them are toys or tools, and if tools, what sort?” (2012, p. 2). Once again, research is divided, specifically for teachers, depending heavily on both teacher methodology and teacher training and experience with technology. A survey study conducted in North Texas by Garthwait, and Weller, focused on a new one-to-one laptop program implemented in an urban, public high school. Researchers noted, that while students were eager and enthusiastic about the technology, teachers grapple with the changes, and have a steeper learning curve (2005, p. 13). Teachers in this study revealed classroom management as an issue in the one-to-one classroom. “An unanticipated result of the program was that it dramatically affected how it immediately changed the locus of control from the teacher to the student when students were given laptops of their own” (2005, p.14). Other teachers felt uncomfortable using the devices, as they were not yet comfortable with them, still others, grappled with how much freedom and leeway to give students (2005, p.14). In his article, Sheppard (2011) notes the iPad to have been distracting at times. Possibly linking this barrier to the negative changes in reading comprehension skills. In Oehlkers and DiDonato’s article, they echo,

The iPads, iPhones, and other devices that allow immediate contact with everyone and anyone at all times have become a distraction in the classroom, supporting the notion that multi-tasking is a dubious way of getting an education. (2012, p. 2)
Another obstacle, noted in Sheppard’s study, “One of the most challenging aspects of the project was finding appropriate content, and this will continue to be a challenge for schools using iPads for reading” (2011, p.15). Other studies have noted similar difficulty in being able to find appropriate content. Garthwait and Weller’s qualitative study examined the barriers faced by two 7th grade teachers, who were implementing a new one-to-one laptop program. One of the teachers described trying to find an appropriate Web Quest about the human circulation system:

There were about eight or 10 out there that I didn’t like for a variety of reasons. Many of them are poorly written, with misspellings and bad grammar; I hate to put that in front of the kids. A lot of them have expired links.... Some are too commercial. Sometimes, they don’t have a whole lot of value. (Garthwait & Weller, 2005, p. 336)

In addition to content, there are other barriers that may reveal themselves as part of a one-to-one adoption. At the start of his study, Sheppard (2001) was faced with the challenge of having a wireless infrastructure too weak to support a class set of iPads. Sheppard notes, “This made significant changes to the way in which the project progressed. Schools looking to make investment in tablet technology need first to ensure that they have a robust infrastructure that will support simultaneous multiple users” (2011, p.15). Early in the Garthwait and Weller study the teachers found, that the Internet connections operated efficiently in the morning but not the afternoon (2005, p. 369). What may seem like small technical issues may in turn have a large impact on the perceptions of student and parents in regard to technology in the classroom. In their Speak Up survey study, researchers found, “a significant obstacle voiced by students (55 percent of high school students and 44 percent of middle school students) is the school
filters and firewalls, which block the websites they say they need for their school work” (2011, p.11). Further, when asked, “what their school could do to make it easier to use technology, the number one response from the students is for them to allow greater access to websites they need (71 percent of high school students and 62 percent of middle school students)” (2011, p.11). As best stated by Garthwait and Weller, “Without a school-wide common understanding of goals and purposes, typical barriers to technology use will remain barriers” (2005, p. 375).

Conclusion

Previous research supports the idea that one-to-one devices such as the iPad are highly motivating to students. However, the literature is divided on whether or not one-to-one devices help improve student achievement. “… Such rapid adoption of a device with such a short history means that figuring out the best educational use can involve a lot of trial and error. That reality has some educators wondering whether the investment is wise” (2011, Quillen, p. 40).

The Chapter 3 will discuss the methodology for this study including methods, participants, setting, and procedure for the study.
Chapter 3: Methodology

Introduction

There is no doubt that the iPad is a revolutionary device, which has contributed to changes in technology. Some believe the iPad is the new great tool for education. With this new technology in the hands of our children, it is important to understand how they perceive this tool in regard to their education. Do they enjoy using the iPad because it is fun, and motivates them in school? Do they feel the iPad is having a positive effect on their education, and has played a role in helping them to learn new concepts? Further, I was interested to look more closely at parent perceptions. Do they feel the iPad has had a positive effect on their child’s motivation in school? Do they feel the iPad is an essential tool for their child’s learning?

This study was an evaluation research study. As defined by Mertler and Charles (2011) “Evaluation research is done to determine the relative merits of various products and approaches used in education. The main focus of evaluation research is to make decisions about these programs, products, or practices (p. 356).” The purpose of my study was to evaluate the effectiveness of the iPad as perceived by students, and parents. In other words, my study was conducted for the purpose of evaluating the newly implemented on-to-one laptop program in the Emerald Union School District.

Method

This evaluation research study was primarily qualitative. Survey research was used for data collection. As described by Mertler and Charles (2011, p.230), “Survey research is primarily a quantitative research technique in which the researcher administers some
sort of survey or questionnaire to a sample-or in some cases a population-of individuals in order to describe their attitudes, opinions, behaviors, experiences, or other characteristics of the population.” A web-based survey was used to collect data from both students and parents. The survey questions in both cases contained multiple choice as well as open-ended responses. The research relied on narrative data contained within the survey, which categorizes the study as qualitative. Related studies have relied on survey research design and teacher, and student interviews for data collection. Li’s study, for example, used a mixed-method approach, with survey research nestled within (2007, p. 381). Li’s study which looked to examine the integration of technology, and its perceptions among students and teachers, included a student survey, with two open ended questions (Li, 2007, p.382). In Warschauer, Cotton, and Ames study, which evaluated a one-to-one student laptop program, researchers used pre and post surveys with a convenience sample of the forth and fifth grade students and teachers as a means of data collection. As illustrated by past studies, survey research seemed the most fitting for my study, as my research questions looked to provide insight into the opinions, and attitudes of students and parents who have participated in the one-to-one laptop program.

**Participants and Setting**

Convenience sampling was used to collect data for this research study. The participants in this study included the 120 students in the 4th grade classes at Sunshine Elementary, as well as the parents of those students. The student participants in this study included approximately 70 boys and 50 girls. The school is located in an upper-middle class area in California, and is part of the Emerald Union School District. Each class is made up primarily of Caucasian students. There are four fourth grade classes at Sunshine
Elementary. Each class received their iPads in November of the 2012 school year. The degree to which the iPads are utilized on a daily basis varies from class to class. With the veteran 4th grade teacher (25 years), using her iPads with students for approximately 40% of the school day, while the other three 4th grade teachers, who have been teaching between 6-12 years, use the student iPads close to 80% of the day. There were however consistencies with the apps being used in each of the classes. The apps most commonly used by students included: an on-line math program which was purchased by the district, called IXL; Keynote, which is a presentation application similar to Power Point; and Pages, which is a word possessing application. Students have also used applications such as iMovie, Comic Life, and Garage Band. Students in each class use the iPad throughout the day in subject areas including math, language arts, writing, social studies, and science. All four teachers agree that students use their iPad primarily during math, writing, social studies, and science. Beginning May 2012, students who had a signed consent from a parent or guardian were permitted to take their iPads home on a nightly basis.

**Procedures for collecting data**

Because I was looking to study student and parent perceptions regarding the iPad as an instructional tool, I chose to use surveys for my data collection. The survey method allowed me to reach a large population of participants, which included 120 4th grade students, and 120 parents of 4th grade students. The procedures for collecting data are outlined below:

1. A 12-question survey was sent via e-mail through the survey service, Survey Monkey to parent participants. In addition, a link to a 12-question survey was
posted on the educational program edmodo. Parents and students who chose to participate were then invited to complete the survey.

2. After the initial e-mail was sent to parents, a second follow-up e-mail was sent to parent participants, reminding them to participate in the survey.

3. Student and parent surveys were completed via Survey Monkey. After both students and parents completed the surveys, I first began by looking for common themes in the multiple choice and open-ended responses. These themes were coded, and placed into categories.

4. Data from parent and student surveys were analyzed separately; results were displayed through graphs, as well as written responses.

5. After results were analyzed separately, I compared student and parent survey responses, looking for commonalities and differences between the responses. The results of this comparison were displayed through graphs and written response.

6. After analyzing student and parent surveys separately, and then comparing the results, conclusions were drawn regarding student and parent perceptions about the iPad as an educational and motivational tool.

7. Based on results, and conclusions drawn from research, a discussion of suggestions for further research was provided.
Chapter 4: Results

Introduction

The purpose of this study was to examine both student and parent perspectives of the iPad as an educational tool for student motivation and learning. This study also looked to examine the relationship between motivation and learning.

As previous studies have noted, the use of one-to-one devices can be highly motivating to some students, however there are mixed findings regarding the educational value of these tools. In his 2011 article, Quillen notes, “… Such rapid adoption of a device with such a short history means that figuring out the best educational use can involve a lot of trial and error. That reality has some educators wondering whether the investment is wise (p.1). In an effort to better understand student and parent perceptions of the iPad as an educational device a survey study was conducted. Participants in the one-to-one iPad pilot program were invited to take part in this research study. This study looked to answer the following questions:

1. Do students view the iPad as a motivating factor to their learning?
2. Do students view the iPad as an essential and beneficial tool for their learning?
3. Do parents view the iPad as a valuable learning and motivational tool, essential to their students learning?
4. Is there a cause/effect relationship between the iPad as a tool for motivation and learning?
Within each of the four fourth grade classes students were given class time to complete a researcher-designed survey (see Appendix A). Students who chose not to complete the optional survey were given an alternate activity. The student survey participation resulted in an 80.6% return rate. (n=96). Of the participants, 58.9% (n=56) were male, and 41.1% (n=39) were female, while one student chose not to state. Parents were sent a separate researcher-designed survey, using the on-line tool Survey Monkey via e-mail. Both the parent and student surveys were optional. After the initial e-mail, a follow-up e-mail was sent to parent participants. One limitation to be noted was the low response rate from parents, with an approximate 26% participant rate (n= 62). Of the parent participants, 48.3% (n=29) were a parent of a male, while 51.7% (n=31) were a parent of a female.

Results of the survey, including an explanation of data, common themes, visual representations, research analysis, and researcher interpretations will be discussed in Chapter 4.

**Data Presentation: Student Survey**

The data for this study was collected through an on-line survey. The following data was recorded as a result of the survey

After the student surveys were completed, the open-ended questions were analyzed and responses were put into common themes. The open-ended questions and student responses are displayed below.

**Table 1**

*Name one way the iPad makes learning easier or harder*
Response | Number of student responses
--- | ---
**Easier**
Faster | 17
Makes learning more fun | 16
Dictionary/iBooks | 15
Educational games | 12
Don’t need pencil/typing is easier | 9
Easier for research | 7
IXL/explains mistakes | 6
Checks spelling for you | 4
Save paper | 4
Don’t need to wait for computers | 3
Get assessment results right away | 2
Presentations | 2
Teaches us skills for the future | 1
Accelerated Reader | 1
Can concentrate better with the iPad | 1
Flashcards | 1
Notes | 1

**Harder:**
Can’t type very fast | 4
Can easily get confused | 3
Can’t write as fast | 1
Research doesn’t always work | 1
Not used to it | 1
Accidental mistakes | 1
Total | 113

It should be noted that the researcher categorized comments to find commonalities, several students gave more than one reason they found the iPad to be helpful. Each of their responses were included in the data. The most common theme in this data related to the iPad being faster (15%). It can be inferred that students like the instant feedback capable of the one-to-one device. The quickness of the iPad is not directly linked to learning, however it is a tool that aids in facilitating student learning. Also noteworthy, were student responses indicating the iPad is more fun as compared to traditional way of learning (14%). Further 13% of students commented that the iPad was helpful because of
the ease of using iBooks, and well as the dictionary app. This finding further supports the idea that students find the iPad to be especially helpful because of its quick response and feedback. Some examples of student responses are listed below.

- It makes learning easier because you have a dictionary at the push of a button.
- It is more fast paced and it's just easier to flip open your iPad then to print stuff out.
- You don't have check your spelling it does it for you.
- The iPad makes learning easier because it motivates me a lot more to do my work.
- The iPad makes learning easier because it’s faster and it teaches us skills for the future. It also opens up a new world for us to explore.
- The iPad makes writing easier, because every time we write on the iPad I learn something new.

While the majority of student responses revealed students perceive the iPad as a tool, which aids in their learning (90%), a small percentage of participants felt the iPad could make learning more difficult (~11%). Most often students indicated that they are not able to type fast enough, as the reason it can be more difficult. Some examples of these student responses are listed below.

- The only problem is that I can't type very fast.
- I think the iPads make it harder to learn because you can't write as fast.
• It makes it harder because if we are using it for a spelling pretest there would be buttons that you would accidentally press that deletes the whole thing. It is also hard to write with your hand on screen while doing math.

• The iPad makes learning easier sometimes, but also you can get confused and it would be easier to just do it on paper.”

The iPad offers a plethora of educational applications. In an effort to examine, more specifically why students feel the iPad is helpful to their learning participants were given an open-ended response question. Results from the question are displayed below Table 2.

<table>
<thead>
<tr>
<th>Response</th>
<th>Number of student responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>IXL</td>
<td>48</td>
</tr>
<tr>
<td>Pages</td>
<td>9</td>
</tr>
<tr>
<td>Khan Academy</td>
<td>8</td>
</tr>
<tr>
<td>Edmodo</td>
<td>8</td>
</tr>
<tr>
<td>Quarrel</td>
<td>6</td>
</tr>
<tr>
<td>Safari</td>
<td>5</td>
</tr>
<tr>
<td>Flashcards</td>
<td>5</td>
</tr>
<tr>
<td>Keynote</td>
<td>4</td>
</tr>
<tr>
<td>Tap quiz maps</td>
<td>2</td>
</tr>
<tr>
<td>Sketchbook</td>
<td>2</td>
</tr>
<tr>
<td>Science 360</td>
<td>2</td>
</tr>
<tr>
<td>Tinkerbox</td>
<td>1</td>
</tr>
<tr>
<td>iMovie</td>
<td>1</td>
</tr>
<tr>
<td>Explain everything</td>
<td>1</td>
</tr>
<tr>
<td>Tap typing</td>
<td>1</td>
</tr>
<tr>
<td>Notes</td>
<td>1</td>
</tr>
<tr>
<td>Garage band</td>
<td>1</td>
</tr>
<tr>
<td>Planets</td>
<td>1</td>
</tr>
<tr>
<td>AR</td>
<td>1</td>
</tr>
<tr>
<td>iBooks</td>
<td>1</td>
</tr>
</tbody>
</table>
Several students’ responses included more than one app, each of their responses were recorded in the data. The educational mathematics app, IXL stood out as an app students perceive as being helpful for their education (45%).

Throughout the study teachers began moving away from paper assessments, and began relying more on online assessments. This switch to online assessments is another example of the change that technology has brought to the classroom. As noted in Ash’s 2011 article, “Moving assessments onto mobile devices may open the door to quicker feedback for students and teachers as well as richer data…” (p.1). With this switch, the researcher was interested to learn whether or not the students preferred the new method of testing on the iPad, or if they preferred the traditional paper and pencil assessments. Data from this question revealed that 82.1% (n=78) of students prefer taking assessments on the iPad versus paper. With 17.9% (n=17) of students preferring paper assessments. Data from this question is illustrated in Figure 1, below.

Figure 1
Do you prefer to take tests on the iPad or on paper?
To further investigate this research question students were posed an open-ended response question asking why they prefer taking tests on either the iPad or paper. Summaries of the responses are recorded below in Table 3.

**Table 3**

*Give at least one reason why you prefer taking tests on either the iPad or on paper.*

<table>
<thead>
<tr>
<th>Response</th>
<th>Number of student responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>iPad</strong></td>
<td></td>
</tr>
<tr>
<td>Easier</td>
<td>18</td>
</tr>
<tr>
<td>Typing is faster/easier</td>
<td>13</td>
</tr>
<tr>
<td>Doesn’t waste paper</td>
<td>13</td>
</tr>
<tr>
<td>More fun</td>
<td>12</td>
</tr>
<tr>
<td>Faster</td>
<td>11</td>
</tr>
<tr>
<td>Immediate results</td>
<td>8</td>
</tr>
<tr>
<td>Takes up less room on my desk</td>
<td>4</td>
</tr>
<tr>
<td>Experience technology</td>
<td>3</td>
</tr>
<tr>
<td>Fixes things for you</td>
<td>3</td>
</tr>
<tr>
<td>Easier to concentrate</td>
<td>3</td>
</tr>
<tr>
<td>Easier for teachers</td>
<td>2</td>
</tr>
<tr>
<td>Don’t like the sound of pencils</td>
<td>2</td>
</tr>
<tr>
<td>Can play on iPad when done</td>
<td>1</td>
</tr>
<tr>
<td>Zoom in</td>
<td>1</td>
</tr>
<tr>
<td>Questions are presented more clearly</td>
<td>1</td>
</tr>
<tr>
<td><strong>Paper</strong></td>
<td></td>
</tr>
<tr>
<td>17.9%</td>
<td></td>
</tr>
<tr>
<td>82.1%</td>
<td></td>
</tr>
</tbody>
</table>
GOING PAPERLESS: STUDENT AND PARENT PERCEPTIONS OF IPADS IN THE CLASSROOM

<table>
<thead>
<tr>
<th>Perception</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can cut/paste</td>
<td>1</td>
</tr>
<tr>
<td><strong>Paper</strong></td>
<td></td>
</tr>
<tr>
<td>iPad is sometimes wrong</td>
<td>6</td>
</tr>
<tr>
<td>Writing is faster</td>
<td>2</td>
</tr>
<tr>
<td>Not good at typing</td>
<td>2</td>
</tr>
<tr>
<td>Less stressful on paper</td>
<td>1</td>
</tr>
<tr>
<td>Can write on paper (notes)</td>
<td>1</td>
</tr>
<tr>
<td>Like to write with pencil</td>
<td>1</td>
</tr>
<tr>
<td>People can cheat using spell check</td>
<td>1</td>
</tr>
<tr>
<td>More used to paper</td>
<td>1</td>
</tr>
<tr>
<td>Takes more time</td>
<td>1</td>
</tr>
<tr>
<td>Make silly typing mistakes</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>113</td>
</tr>
</tbody>
</table>

Most often (15.9%) students stated that assessments were ‘easier’ with the iPad. Some examples of student responses follow.

- I like to take tests on the iPad because it makes it easier to do your work.
- On the iPad all you have to do is tap something, but on paper you have to pick up the pencil and circle it.
- I prefer to take tests on the iPad because it goes a lot faster.
- I like taking tests on the iPad because I get my scores immediately when I'm done.
- I prefer to take tests on our iPads so we can save paper, and have a little more fun.
- Because on paper you use a pencil (sic) and your fingers get tired and on the iPad your fingers don't hurt that much.

While the majority of students indicate a positive feeling toward on-line assessments, several students reported a preference toward the traditional paper assessment.
• I am more use to paper and I do better (sic) on it.

• The iPad is sometimes wrong. Once, when I took a spelling test, the person who had put the words in the iPad misspelled one of them. Another time, the words were in the wrong order and I only got 2/20.

• I like it on paper because on iPads I always make typos when I take my spelling tests.

• I would rather (sic) take the test on paper so it would take less stress of me.

In addition to the above open-ended response questions, the student survey also included both multiple choice, and Likert scale questions. The multiple-choice responses were analyzed and were categorized by percentages.

In an effort to seek a better understanding of the ways in which the iPad motivates students, the researcher was interested to know participants preferred method of reading, be that on an iPad or a paperback book. It can be noted that two students skipped this question. The data from this question revealed that 61.7% (n=58) of student participant prefer reading on their iPad versus a traditional book, as illustrated below in Figure 2

Figure 2
*When you read, would you choose to read on an iPad or a paperback book?*
This data suggests that students may be more motivated to read if provided a book on their iPad, versus a paperback book. Further, as noted earlier in Table 1, 15.9% of students felt the iPad was helpful to their learning because of the dictionary and iBook app, both of which assist with reading. Suggesting that the iPad may be perceived as both a valuable motivational and learning tool (especially with reading). Interestingly, data from this question revealed an unexpected difference in preference between boys and girls, as illustrated below in Figure 3.

**Figure 3**
*Reading preferences by gender*
As the data in above reveals, more often boys preferred reading from an iPad then from a paperback book, with boys choosing the iPad 70.9% of the time and girls choosing the iPad 48.7% of the time. Suggesting that the majority of boys prefer reading from an iPad, while a slightly higher number of girls prefer reading from a paperback book (51.28%). The gender differences were analyzed for each question on the survey; this data can be seen in Appendix C.

In seeking to understand students motivation in school, the student survey included a Likert-scale question, asking students to order from 1-4, what motivates them in school, with 1 being the most motivating, and 4 being the least motivating. The results of this question are displayed below in Figure 4.

**Figure 4**

*Student motivation in school*
As depicted above in Figure 4, 50.5% (n=48) of students chose the iPad as the most motivating factor in school. Closely behind the iPad were teacher (44.1%) and parents (43.5%) as motivating factors.

As stated in research question 2, this study looked to examine how students perceived the iPad as an educational tool. The researcher was seeking to see whether students felt the device was an important component to their learning. Students were asked if they felt the iPad made learning easier. Responses to this question can be seen in Table D below.

Table 4

<table>
<thead>
<tr>
<th>Does the iPad make learning easier?</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, the iPad helps make learning easier.</td>
<td>70</td>
</tr>
<tr>
<td>No, the iPad makes learning harder.</td>
<td>2</td>
</tr>
<tr>
<td>The iPad does not make learning easier or harder.</td>
<td>12</td>
</tr>
</tbody>
</table>
It can be noted that (N=84) 12.5% of student participants skipped this question. According to the data however, 83.3% (n= 70) of students felt the iPad helps to make learning easier. While 2.4% (n=2) of students felt the iPad made learning more difficult. Further, n=18 students replied to the open-ended response, ‘other.’ Examples of student responses are listed below.

- The iPad helps make learning easy for me in some situations and in others it makes it harder but mostly it doesn't make learning easier or harder.
- It helps but sometimes we get distracted.
- The iPad sometimes makes learning easier and sometimes make learning harder.
- It doesn't make it easier or harder but it makes it more fun.
- We always have to go over everything cause people don't know how to work the iPads

Looking to further determine how students perceive the iPad as helpful to their learning the researcher asked student participants how they feel the iPad is most helpful to their learning. Data from this question concludes 78.1% (n=75) of students felt the iPad was most helpful for math, as illustrated below in Figure 5.

**Figure 5**

*In which subject do you feel the iPad is most helpful to your learning?*
Additionally, when asked whether they would rather practice math on the iPad, or use the traditional paper and pencil approach, 78.9% (n=75) responded that they would prefer to practice on their iPad, as can be seen below in Figure 6.

**Figure 6**
*Do you prefer to practice math from your textbook (and on paper) or do you prefer practicing math on your iPad?*
The data collected from the student iPad survey suggests the iPad is perceived as both an educational and motivational tool for students. Figure 7 below reveals the reasons students feel the iPad is an important tool for the classroom.

**Figure 7**
*Why is the iPad important?*

The above table serves as a support to the hypothesis that the iPad is a highly motivating tool for students. With 86.5% (n=83) of students responding that the iPad is important because it helps to make learning more fun.

As with any change, there are potential downfalls to the one-to-one iPad program. Figure 8 summarizes student perceptions regarding the negative aspects of using the iPad in school.

**Figure 8**
*Why is the iPad NOT a good tool for use in school?*
Based on the data above, 61.8% (n=55) of students feel the iPad can sometimes be a distraction from learning. Some open-ended student responses support this feeling as stated below.

- Too much fun
- People may play on the iPad instead of learning

57.3% (n=51) of students reported a downside as being the iPad can break very easily.

- It makes me uneasy when I take it home because I am afraid that I might break it or loose it.
- If you break it you feel so sad rather if you drop your math book.

**Data Presentation: Parent Survey**

The second part of this study sought to examine parent perspectives on the iPad in education. The parent survey can found in Appendix B. Results and analysis from the parent survey are described as follows.
Parent participants were asked to rate their child’s motivation in school since receiving their iPad. Using a Likert-scale from 1-5 with 1 being not motivated, 3 being somewhat motivated, and 5 representing a significant increase in motivation, parent responses were averaged with a mean score of 4.23. Of the N=62 responses n=27 indicated a significant increase in motivation, while n=10 indicated that they had seen no change in motivation. Results from this question are illustrated below in Figure 9.

**Figure 9**
How has your child’s motivation changed since the use of the iPad in school?

![Bar chart showing motivation changes]

*Based on a Likert-scale with 1 being not motivated, 3 indicating no change in motivation, and 5 indicating motivation has increased significantly.*

Similarly, parents were asked to rate their feelings regarding the iPad as an educational tool. With 1 being unbeneficial, 3 being somewhat beneficial, and five being very beneficial. Results from this question are displayed below in Figure 10.

**Figure 10**
How beneficial do you feel the iPad is to your child’s education?
GOING PAPERLESS: STUDENT AND PARENT PERCEPTIONS OF iPADS IN THE CLASSROOM

Based on a Likert-scale with 1 being not beneficial at all, 3 being somewhat beneficial, and 5 being very beneficial.

With responses averaged, the mean score was 4. Suggesting, parents feel the iPad is beneficial to their child’s education. In addition, parents were asked an open-ended response question, in an effort to better understand more specifically how parents feel the iPad is beneficial. Results are shown below in Table 5.

Table 5
Name 1 way the iPad is beneficial to your child’s education.

<table>
<thead>
<tr>
<th>Response</th>
<th>Number of parent responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excited about learning</td>
<td>26</td>
</tr>
<tr>
<td>New technology</td>
<td>17</td>
</tr>
<tr>
<td>Class presentations/creativity</td>
<td>5</td>
</tr>
<tr>
<td>Customize based on ability</td>
<td>3</td>
</tr>
<tr>
<td>None</td>
<td>2</td>
</tr>
<tr>
<td>Reading/writing are easier</td>
<td>2</td>
</tr>
<tr>
<td>Interactive</td>
<td>2</td>
</tr>
<tr>
<td>Novelty</td>
<td>1</td>
</tr>
<tr>
<td>Ease of assessments</td>
<td>1</td>
</tr>
<tr>
<td>Portability</td>
<td>1</td>
</tr>
<tr>
<td>Paperless</td>
<td>1</td>
</tr>
</tbody>
</table>
Total 61

Most commonly, parent’s responses related to their child being very excited to use the new technology.

- The technology and novelty has been very beneficial in terms of motivating and engaging my child.
- It's made her more excited about learning.
- His engagement and desire to do "school work" has increased. It has made learning a lot more fun and interactive, so he's totally into the learning process.
- Excited about turning on her iPad, showing me what new things she can do on it. Bar graphs, journaling, music, we even play Chicktionary together. Every other day she shows us something.
- Her ability to work on a PC/Mac has increased significantly. She has learned to use the Internet as a tool and how to access information. She is willing to incorporate information that she has gathered on the Internet into her schoolwork, which somehow seems to be much more fun than collecting information from a book.

Furthermore, parents were asked why they feel the iPad is an important tool for education. As noted similarly in Table 5 above many felt the exposure to new technology was of utmost importance. Figure 11 below shows that 86% (n=49) of parents (N=57) felt the iPad was beneficial to their child’s education because it is important for them to learn to use the latest technology. With
71.9% of parents sighting the educational games as a beneficial aspect to their child’s education.

Figure 11
*Why is the iPad beneficial to your child’s education?*

When asked if they felt the iPad was helping to better prepare their child for the future 86.2% (n=50) of parents felt that the iPad was helping to prepare their child.

Results of this data are illustrated below in Figure 12.

Figure 12
*Do you feel the iPad is helping to better prepare your child for their future?*
In an effort to better understand why parents felt the iPad was beneficial to their child’s education, the researcher posed an open-ended question seeking to understand specific ways the iPad aides in preparing students for their future. As illustrated in the Table below many parents perceive the iPad as an important tool for learning technological skills.

Table 6
Is the iPad helping to prepare your child for their future?

<table>
<thead>
<tr>
<th>Response</th>
<th>Number of parent responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>They are learning tech skills for the future</td>
<td>40</td>
</tr>
<tr>
<td>Different way of learning</td>
<td>3</td>
</tr>
<tr>
<td>Learning to make smarter choices with apps</td>
<td>2</td>
</tr>
<tr>
<td>Individualize instruction</td>
<td>1</td>
</tr>
<tr>
<td>Motivational</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Distracted by games</td>
<td>3</td>
</tr>
<tr>
<td>Balance needed</td>
<td>2</td>
</tr>
<tr>
<td>Traditional tech. is just as effective/less costly</td>
<td>1</td>
</tr>
<tr>
<td>Introduced to the classroom too soon</td>
<td>1</td>
</tr>
<tr>
<td>Too much access</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
</tr>
</tbody>
</table>

Open-ended narrative from the data above is represented below.
• I think it helps students figure out how to access, generate and manipulate information. Some skills based programs/apps can also individualize learning for students.

• She's learning the latest technology early on.

• The market is leaning towards having apps for everything, so if they can start learning the bad/good early on they will be better prepared and make smarter choices on the apps that they can use.

• This technology is here to stay. They have a leg up on it

• Computers are the future. There is no turning back to the old ways of learning. Therefore to survive in this world one must keep up with current ways of learning and working.

• The future is technology. She can already use the iPad better than I can. I hope they continue with the program.

• He was tech savvy before, but is much more so now, and knows apps that I don't know. He is learning how to do his work via technology, which is the skill he will need for the future.

While most parents viewed the iPad as a positive tool for their child’s future, others voiced some concern.

• I think it's critical that technology does not replace hands-on learning.

There needs to be a balance since experiential learning (touching, seeing, hearing, etc) is an essential component of a child's development.

• Traditional teaching could accomplish the same thing and be less costly.
• It has been introduced into classroom learning too soon.

• It seems the kids play games on it more than anything and are less engaged with each other and the teacher.

• The problem that I can see with the iPad is the possible dangers that children can access. They are naturally curious creatures that lack experience and therefore become prey to the lewd and corrupting websites that can do irreversible damage to their minds.

Interestingly, 55.7% (n=34) of parents felt that their child’s education would not be affected without the use of the iPad, as illustrated below in Figure 13.

![Figure 13](image)

*Do you think there would be a negative effect on your child’s education without the use of the iPad?*

However, the majority of parents feel that technology, in general is important to their child’s education. With 80.6% (n=50) of parents agreeing that keeping up with the newest trends is important. The data from this question is displayed below in Figure 14.

![Figure 14](image)

*Do you feel technology is an important component to your child’s education?*
Indicating that parents seem to be less concerned with their child using the iPad specifically, as they feel some type of technology integration is important. As outlined in the student survey, 61.8% of students stated that the iPad could sometimes distract them from learning. The majority of parents, on the other hand, felt one of the downsides to the iPad were the loss of handwriting and cursive skills. The graph below summarizes the responses.

**Figure 15**

*Why is the iPad NOT a good tool or use at school?*
Additionally, parents voiced other concerns with the use of iPads in school, as noted below.

- I think the iPad is very beneficial if used in the right way: as a tool - not a replacement, balanced with hands-on learning. There is a danger when students spend too much time engaging in "virtual experiences", especially when it comes to subjects like science.”

- Although we love the iPad, it has also been a huge distraction for my son. He's very savvy on it and he's too quick to get tempted by some of the fun games apps. Textbooks were simply just that. You read or worked on the worksheet and that's it. The iPad allows my son to wonder from app to app and this has been a major issue this year.

- If it is used like a workbook, it is no better than a workbook.

- The children should learn the basics of reading, writing and research before applying this new tool.
As discussed earlier 78% (n=75) of students felt the iPad was most helpful with math, 57% (n=32) of parents agreed. Results from the parent survey are summarized below, in Figure 16. This data suggests both parents and students agree the iPad is most helpful for education in that subject area.

**Figure 16**
*In which subject do you feel the iPad is most important to your child’s education?*

Parents seemed less inclined to provide an answer when asked which app they felt was most important to their student’s learning, with 24% (n=15) participants skipping this question. Parents commented,

- None of the "apps" have been noticeably beneficial to her learning. They’ve been entertaining.

- Not sure there is a specific app that I feel is most beneficial. I think there may be apps that are better. I do not think my child is using them.
• Not sure. Overall, I love the whole thing, not just one app.

• I am embarrassed to admit that I have been so busy in my own life that I haven't had time to even examine that question.

When parents did respond to the question with a specific app standing out over others, IXL was mentioned about 15% of the time, while edmodo was mentioned by 11% of the respondents.

Lastly, parent participants were invited to give any additional feedback they have regarding the iPad in school. Of the responses (N=33), 15% (n=5) revolved around the iPad being a positive and motivational tool. Some of the parent responses are as follows.

• My son is excited to be using it and is learning responsibility

• It has been a very positive (sic) experience in our family. Perhaps because it is so new to us it has been more like a new toy in the house then just a new piece of equipment to get a task done. She has thoroughly enjoyed taking pictures, creating movies and collaborating with her brother in creative fun. On the downside it is addictive. Always wanting to do another activity.

• Overall I think the iPad has been very beneficial. With any technology it is all in moderation for its use so that it still is fun and they are interacting with other students and learning to work together to solve problems.

• I think that the iPad has potential to help students with special needs and to teach all children in all kinds of innovative ways. I am concerned
that in many classrooms, the teachers will continue assigning students the same kinds of drill and practice exercises that they have always done, rather than harnessing the power of this technology to revolutionize teaching and learning.

- Being in class every week, I see the many benefits, but also see that some kids are doing other things on their iPads besides what they should be working on (changing fonts over and over, looking at non-essential websites and images, etc). Maybe these kids wouldn't be focused on their work even without the iPad, but it definitely makes it harder to stay on task sometimes.

**Summary**

The data presented in this chapter was intended to answer the four research questions. Which each focused on gaining an understanding of student and parent perspectives on the iPad as a motivational and education tool. The initial findings suggest that both parents and students perceive the iPad as highly motivational. Findings further suggest students perceive the iPad as an integral part of their education, assisting with their learning, while parents seem less convinced the iPad itself offers the most technological benefits. Interpretations of the data will be discussed in more detail in chapter 5.
Chapter 5: Discussion

Introduction

The purpose of this study was to identify student and parent perceptions concerning the newly implemented one-to-one iPad program at Sunshine Elementary. This qualitative study used survey research to collect data from participants. This chapter will summarize findings, and discuss suggestions for further research in this area.

Summary of Findings

Data for this study was collected in an effort to answer the following research questions.

1. Do students view the iPad as a motivating factor to their learning?
2. Do students view the iPad as an essential and beneficial tool for their learning?
3. Do parents view the iPad as a valuable learning and motivational tool, essential to their students learning?
4. Is there a cause/effect relationship between the iPad as a tool for motivation and learning?

Research question number one focused on the effect the one-to-one iPad program had on student motivation. Based on data collected from the student surveys, it appears the iPad is a highly motivational tool for students. As evident in Figure 4, 50.5% of students chose the iPad as the most motivating factor in school (ahead of parents, teachers, and themselves). In addition, 86.5% of students felt the iPad was important in school because, ‘it makes learning more fun.’ The data also revealed that 61.7% of students
prefer reading on an iPad as compared to a traditional paperback book. Possibly suggesting student interest in reading may be heightened with the use of an iPad. Additionally, 78.9% of students indicated that they prefer practicing math on their iPad versus the traditional paper and pencil method. Again, supporting the hypothesis that the iPad may contribute to student motivation. Further, 82.1% of student participants prefer taking their assessments on the iPad, with 12.6% of student’s preferring the iPad because it was ‘more fun.’ Based on these results the original hypothesis that students are highly motivated by the one-to-one iPads in school can be supported.

Research question number two examined the student perceptions of the iPad as a learning tool. The researchers original hypothesis was that students do feel the iPad is an essential tool to their education and learning. This hypothesis can be supported based on data from the student survey. As shown in Table 4, 83.3% of students described the iPad as a tool that helps to make learning easier. When asked why the iPad is an important tool to use in school, 66% felt it was important because it makes learning easier. Most often (18%), students felt the iPad enabled them to learn easier because the iPad is very fast; feedback, research, and information can all be accessed very quickly. Students also felt the iPad was useful for the ease of looking up unknown words, through either the iBook’s app, or the dictionary app. Interestingly, 78% of students felt that the iPad was most helpful in math. In fact, the math program and application IXL was reported most often (45%) as being the most helpful application for learning. While the data does support the hypothesis that students perceive the iPad as being of benefit to their learning, it should be noted that 61.8% of students indicated that the iPad can sometimes be a distraction from learning.
Research question number three focused on the parent population. The parent survey collected data in an effort to better understand parent perceptions of the iPad as a learning and motivational tool for their child. The researcher hypothesized that parents felt the iPad was a highly motivating tool for their student, while they feel the iPad is only somewhat essential to their student education and learning. Based on data collected from the survey, the researcher hypothesis can be supported. Parents were asked to rate their child’s motivation in school since receiving their iPad. The average rating was 4.23, with 1 being not motivated, and 5 indicating that motivation has increased significantly. These results suggest both that student motivation has increased, and that parents have actually observed an increase in motivation. In fact, 43% of parents felt the iPad was beneficial to their child’s education because it helped to make them more excited about learning. Further, as depicted in Figure 5, 64.9% of parents felt the iPad was important because it helped to engage their child. While this data supports the perception of the iPad as a student motivation, parents were less inclined to rate the iPad as an important educational tool.

Based on the results, it appears as though parents feel that while technology is very important, the iPad as a specific technological device is not integral to their child’s education. For example, 80.6% of parents felt that technology was an important component to their child’s education, while only 38.7% of parents viewed the iPad as being very beneficial to their child’s education (35.5% viewed the iPad as somewhat beneficial). Most often parents referred to the iPad as being beneficial because it was keeping their child abreast of the latest technology, with 86.6% of parents indicating the new technology, as the main reason the iPad is important. In addition 86.2% of parents
felt this new technology was helping to better prepare their child for the future. On the other hand, 55.7% felt their child’s education would not be affected with out the iPad. Further supporting the notion that while learning to keep up with the latest technology is important, parents are not concerned entirely with the specific device.

The purpose of research question number four was to examine whether or not there is a relationship between student motivation and learning. In other words, are students learning more in school because of the iPad? The researcher hypothesized that there would be a cause and effect relationship between the two; students who feel motivated by the iPad also feel the iPad helps with their learning. Based on the data collected from the student survey, there is not enough evidence to reject the null hypothesis. While, the data shows evidence of students being highly motivated by the iPad, as well as feeling the iPad is helpful to their education, there is not enough evidence to support a relationship between the two. Without the limitation of time the researcher could have used quantitative research to test students before the start of the one-to-one program, followed by a posttest after having used the devices for some time this may have enabled a more effective means of data collection for this particular research question.

**Findings in the context of existing Literature**

Sheppard’s 2011 study compared two year-six classes; one class read a book on the iPad, while the other class read from a traditional book, later the classes reversed roles. Sheppard’s study used both quantitative and qualitative data in order to examine both students learning as well as student motivation. Sheppard’s findings regarding student motivation were similar to the research done in this study as stated by Sheppard, “There is no doubt that the use of the iPad was hugely engaging for the students in our project” (p.
However, after comparing the student reading assessments from the iPad group and the traditional paperback book results indicated little or no change. “When broken down by ability levels, the only group that showed a majority of positive growth was the Low group in the Analysis category. The other categories for all three ability groups recorded negative or no growth when using the iPad” (p. 14). In effect, concluding that with the addition of the iPad there is little statistically significant change in student learning (p. 15). It is also interesting to note another similarity between the two studies. While 61.8% of students in our study reported the iPad as sometimes being a distraction to learning, Sheppard echoed this feeling in his own study, “The iPad was, at times, a distraction to the lesson” (p. 14). Sheppard suggests this as the possible reason for a decline in comprehension scores (p. 15).

Project Tomorrow’s 2010-2011 survey of K-12 students, parents, teachers and administrators echoed the possibilities mobile devices provide for student engagement (p. 6). Interestingly however, while both parents and students in our study agreed the iPad was most useful in the subject area of mathematics, middle and high school students in the Project Tomorrow study felt differently. “Students tell us that it is in their English/language arts classes where they are using technology most regularly to enhance learning (60 percent). That corresponds to the over three-quarters of students who say that they use technology tools to help complete writing assignments” (p. 12). This discrepancy could be attributed to many factors, possibly because our study surveyed elementary aged students, while the Project Tomorrow survey was focused on middle and high school students (for this question), possibly there is more of a focus on ELA and writing in the
higher grades, or maybe ELA and writing teachers are more comfortable using mobile devices.

It is also interesting to note the similarities in parent survey results from our research and the Project Tomorrow research. For example, 80.6% of parents in our survey felt technology was an important component to their child’s education. Project Tomorrow found, “Fifty-two percent of parents consider instructional technology to be extremely important for their child’s success…” (p. 13). Additionally, while 43% of our parent participants felt the iPad enhanced their child’s engagement in school, 64% of Project Tomorrow’s participants sighted their child’s engagement as one of the top 10 factors for evaluating the quality of computer based games, websites or online classes” (p. 14).

**Implications and Recommendations for further research**

As school districts throughout the world begin to expose their students to one-to-one mobile learning, it is important we continue to recognize the effects these devices are having on students. With that being said, there are several implications based on the present research for teachers and administrators that should be considered. As previously noted, parents feel technology instruction is an important part of their child’s education, however many parents felt that their child’s education would not be affected without the iPad. In effect parents are suggesting school districts may want to consider providing their students with new technology, however with diminishing funding, an alternative, less expensive devices may suffice. On the other hand, parents may not value the iPad as a learning tool simply because they do not understand the value of the iPad incorporation
with Project-Based Learning. Over the course of the one-to-one pilot program the researcher observed many Project-Based Learning activities in the class. Students worked cooperatively as a team, learning problem solving, and critical thinking skills without much teacher intervention needed. The iPad was an important tool in expanding each lesson, allowing students to be independent learners with the information at their fingers.

As Emerald Union School District plans to continue with the iPad roll out in all schools, grades 3-6 administrators may want to consider holding a parent night in an effort to show parents the power of the iPad as an uniquely powerful tool for education and Project-Based Learning.

It should also be noted that a significant number of students reported the iPad as sometimes distracting (61.8%). This should serve as a reminder to teachers just how easily these devices can send their students off task. It seems as though students of all ages need to be carefully monitored while using an iPad or any such device. Additionally, it may be wise for teachers to establish ethical responsibility within their own classroom, teaching children appropriate ways to use their device. If this process is started early (when students first receive their iPad’s in third grade) and taught throughout the year and continually discussed, hopefully it will become a regular practice for the students.

Lastly, while 61.7% of students in our study reported they would rather read on their iPad then from a traditional book that still leaves 38.3% of students who prefer a traditional book, reminding us to still remember that there is more to education than technology. While technology supports our visual learners, we also need to be mindful of auditory and kinesthetic learners and create a balance within our classroom. Books, art,
and other hands on activities need not be abolished; rather they should be carefully integrated with technology.

**Recommendations for further study**

As we move into the future it will be interesting to see how student learning and motivation change. Students may be highly motivated by the iPad now because it is new and exciting, but how will they feel ten years from now after the novelty wears off? Future research should continue to study how mobile devices are affecting student motivation throughout time. Further, it would be worthwhile to look more closely at the learning outcomes of students who use mobile devices versus students who do not. A quantitative study looking at student assessment within these two groups could be very insightful. Lastly, as our study has unintentionally found some discrepancies in data among boys and girls, it would be interesting to further investigate the differences in perceptions of using the iPad as a tool displayed by the gender groups.

**Conclusion**

Technology is continually growing and changing. It is our responsibility as educators to ensure our children are not left behind in the movement. We also hold the privilege of teaching. In order to effectively teach our kids we need to understand the most effective methods for teaching. In conjunction with technology, we hold the power to motive, inspire, and challenge our future generations. With the addition of one-to-one devices such as the iPad in the classroom, students are learning to take responsibility for their own education. The iPad engages, motivates and gives students instant access to
information.
References


Appendix A

iPad Student Survey

1.) Are you
   A. Female
   B. Male

2.) When you read, would you choose to read on:
   A. an iPad
   B. a paperback book

3.) What motivates you in school? (Put in order 1-4. One is the most motivating and 4 is the least motivating)
   _____your iPad
   _____your parents
   _____your teacher
   _____yourself

4.) Do you feel the iPad makes learning easier?
   A. Yes, it helps makes learning easier
   B. No, it makes learning harder
   C. the iPad doesn’t make learning easier or harder

5.) If you answered Yes or No on question #4, name 1 way the iPad helps to make learning easier or harder.

6.) Do you prefer math practice from the textbook (and on paper), or do you prefer practicing your math on your iPad?
   A. math textbook and paper
   B. iPad

7.) Which app on the iPad is most helpful for learning?

8.) Do you prefer to take tests on
   A. the iPad
   B. paper

9.) Give at least 1 reason why you prefer taking tests on either the iPad or on paper.

10.) Math
    A. Math
    B. Language Arts
    C. Science
    D. Social Studies
11.) Why is the iPad important? Mark all that apply.
   _____ it helps make learning more fun
   _____ it helps make learning easier
   _____ using the iPad helps to save paper
   _____ the iPad has fun games
   _____ it is important for us to learn to use technology
   Other ________________________________________________

12.) Why is the iPad NOT a good thing to use at school? Mark all that apply.
   _____ it can break very easily
   _____ it can sometimes be a distraction from learning
   _____ I talk with my classmates less when using the iPad
   _____ I don’t practice my handwriting and cursive as much
   _____ I don’t practice typing
   Other ________________________________________________

Appendix B

iPad Parent Survey:

1.) Is your child
   A. Female
   B. Male

2.) On a scale from 1-5 how has your child’s motivation changed since the use of the iPad in school (one being not motivated at all, and 5 being very motivated)?
   1. 2. 3. 4. 5.

3.) On a scale from 1-5 how beneficial do you feel the iPad is to your child’s education? (1 being not beneficial at all, and 5 being very beneficial)
   1. 2. 3. 4. 5.

4.) Name one way the iPad is beneficial to your child’s education.

5.) Which app on the iPad do you feel is most beneficial to your child’s learning?

6.) In which subject do you feel the iPad is most helpful to your child’s learning?
   A. Math
   B. Language Arts
   C. Science
   D. Social Studies
7.) Why do you feel iPad is important to your child’s education. Mark all that apply.
   ______ the educational games
   ______ it helps make learning easier for my child
   ______ using the iPad helps to save paper
   ______ the iPad has fun games that engage my child
   ______ it is important for my child to learn to use new technology
   Other____________________________________________

8Technology is an important component to my child’s education.
   A. Yes, it is very important my child is keeping up with the latest technology
   B. No, I do not feel technology is important to my child’s education at this time
   C. Neutral

9Do you feel the iPad is helping to better prepare your child for their future? How? How?
   Please give one reason why or why not.
   A. Yes, because
       ________________________________________________________________
   B. No, because
       ________________________________________________________________
   C. Other,___________________________________________________________
       ________________________________________________________________

10.) Your child has begun taking many of their weekly quizzes and tests on-line. What
      is your opinion of on-line assessments?

11.) Do you think there would be a negative effect on your child’s education
      without the use of the iPad?
      A. Yes, it is a very important component to their education
      B. No, their education would not be effected

12.) Why is the iPad NOT a good thing to use at school? Mark all that apply.
      ______ it can break very easily
      ______ it can be very distracting for children
      ______ the iPad causes children to have less social interaction
      ______ Students are losing handwriting and cursive skills
      ______ Students are not practicing their typing skills
      Other___________________________________________________________

13.) Please let me know any additional thoughts you have regarding the iPad.
Appendix C

Student Survey Data: By gender

Figure 17
Do you feel the iPad makes learning easier?

![Graph showing student responses to the question of whether the iPad makes learning easier.]

Figure 18
Do you prefer math practice from the textbook (and on paper), or do you prefer practicing math on your iPad?

![Graph showing student preferences for math practice.]

Figure 19
Do you prefer to take tests on the iPad or on paper?
Figure 20
In which subject is the iPad most helpful to your learning?

Figure 21
Why is the iPad important? Mark all that apply.
Figure 22
Why is the iPad NOT a good thing to use at school? Mark all that apply.

- It can break very easily: 23 Female, 27 Male
- It can sometimes be a distraction from learning: 23 Female, 31 Male
- I talk with my classmates less when using the iPad: 1 Female, 2 Male
- I don’t practice my handwriting and cursive as much: 19 Female, 26 Male
- I don’t practice typing: 3 Female, 4 Male
Appendix D

Parent Survey Data: By student gender

Figure 23
On a scale of 1-5 how has your child’s motivation changed since using the iPad. (With 1 being not motivated at all, 3 indicating no change, and 5 being very motivated).

Figure 24
How beneficial do you feel the iPad is to your child’s education?

Figure 25
In which subject do you feel the iPad is most helpful to your child’s learning?

![Bar chart showing the distribution of responses by subject and gender.]

Figure 26
Why is the iPad important to your child’s education? Mark all that apply.

![Bar chart showing the distribution of responses by subject and gender.]

Figure 27
Do you feel technology is an important component to your child’s education?
Your child has begun taking many of their weekly quizzes and tests on-line. What is your opinion of on-line assessments?
Figure 30
Do you think there would be a negative effect on your child’s education without the use of the iPad?

Figure 31
Why is the iPad NOT a good thing to use at school? Mark all that apply.
GOING PAPERLESS: STUDENT AND PARENT PERCEPTIONS OF IPADS IN THE CLASSROOM

Why is the iPad not a good thing to use at school?

![Bar chart showing student and parent perceptions of iPads in the classroom.](image-url)