

A Look at the Effect iPads Have on Attendance of Elementary Students of  
Poverty

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A Special Project

Presented to

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In Partial Fulfillment

of the Requirement for the Degree of

Master of Education

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Summer 2013

## FACULTY APPROVAL

Does teaching with iPads have an effect on the attendance of elementary students of poverty when compared to their peers who do not receive iPad instruction?

Approved for the Faculty

\_\_\_\_\_, Faculty Advisor

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## ABSTRACT

The project was designed to see if teaching children of poverty through iPads would increase attendance. The project integrated a class set of iPads into two classrooms, with a focus on mathematic instruction. The null hypothesis was accepted in that integrating iPads into classrooms did not show a positive influence on attendance when compared to classrooms that did not integrate iPad.

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## CHAPTER 1

### Introduction

#### Background for the Project

Children of poverty were more likely to have chronic stress. Chronic stresses often led to a condition known as allostatic load. Allostatic load, defined as when the brain adapted to negative life experiences, caused children with this conditions to become either hyper-responsive or hypo-responsive, instead of returning to a healthy baseline of homeostasis (Jensen, 2009, p. 26). Szanton, Gill, and Allen (2005) “found higher rates of chronic stress and allostatic load among low-income populations than amount high-income populations” (as cited in Jensen, p. 26). Chronic stress was linked to over fifty percent of all school absences and reduced motivation, determination, and effort (Jensen). “Absenteeism is the factor most closely correlated with dropout rates” (Jensen, p. 10). “Missing nearly a month or more of school during kindergarten is associated with lower academic achievement in first grade. The impact was most profound for children in poverty, for whom poor kindergarten attendance predicted low fifth-grade performance” (Chang, 2010). Research done by the National Center for Children of Poverty found that chronic absences by sixth grade were a clear predictor of a student who would dropout. By ninth grade, missing twenty percent of the school year was a better predictor of dropping out than test scores (Romero & Lee, 2008).

Romero and Lee's (2008) research showed that to improve attendance in children of poverty, a variety of factors played a role in children's success. Jensen (2009) looked at five key factors: Standards-Based Curriculum and Instruction, Hope Building, Arts, Athletics, and Advanced Placement, Retooling of the operating System, and Engaging Instruction. Standards-Based Curriculum and Instruction showed as a factor of success because "closer adherence to standards improves teacher focus, and that correlates with improved teacher quality at low-income schools" (Desimone, Smith, Hayes & Frisvold, as cited in Jensen, p. 109). Hope building was found as a success factor because "hope and learned optimism are crucial factors in turning low-socioeconomic status (SES) students into high achievers. Hopeful kids try harder, persist longer, and ultimately get better grades" (Jensen, p. 113). "When educators believe students are competent, students tend to perform better; conversely, when educators believe students have deficits, students tend to perform more poorly" (Johns, Schmader, & martens, as cited in Jensen, p. 113). Another key factor found in low-SES student success was to incorporate the arts, athletic activity, and advanced placement curriculum into the school day. "The arts and a challenging curriculum enhance essential learning skills and cognition, whereas sports, recess and physical activity increase neurogenesis and reduce kids' chances for depression" (Jensen, p. 118). Building the students' academic operating systems was also found as an essential

factor for academic success. Jensen explained a student needed: an attitude of success and confidence to change and learn new behaviors, demonstrated hopeful effort and showed an emotional long-term drive to achieve and the ability to delay gratification, an ability to stay focused for detailed learning, good short-term and working memory for high visual and verbal capacity, strong processing skills to manipulate and manage visual, auditory, and tactile sensory input, and skilled in sequencing to apply strategies to prioritize task and items. Researchers formed a strong consensus on the importance of engaged learning. “Engaging instruction is any strategy that gets students to participate emotionally, cognitively, or behaviorally. Engagement happens when you as an instruction leader stimulate, motivate, and activate” (Jensen, p. 134). Engaged students actively participated in their own learning, got involved in making decisions in the course of their study, conducted vigorous research, thought of ideas for projects, and used technology to make discoveries based on their choices (Jones, Valdez, Nowakowski, & Rasmussen, as cited in Jensen, p. 136).

### Statement of the Problem

The teacher-Researcher was interested in better understanding absenteeism in school for students of poverty.

### Purpose of the Project

The purpose of this proposed research was to investigate the impact that technology, specifically the iPad, had on the attendance in students of poverty versus students of poverty who do not have access to the iPad.

### Delimitations

This project took place in a small agricultural town in eastern Washington during the 2012-2013 school year. In 2011, two classroom teachers were given a class set (thirty) of iPads as a pilot program. The teachers were given two days of training through Apple in August of 2011 and 2012. The classroom teachers chosen taught First Grade and Fifth Grade. In 2012-2013 those same three classroom teachers used the iPads for instruction for the second year, in grades Two and Five. The participants in this study included two classrooms from Second Grade and two classrooms from Fifth Grade, one classroom that used iPads in their daily Mathematics, Science and Writing instruction and one classroom that did not have a class set of iPads. One teacher looped with their students, so one class of students were in their second year of using the iPads for learning. Each classroom had an average of twenty-four students. Students in Second grade ranged in age from seven to nine. Students in Fifth Grade ranged in age from ten to twelve. The subject matter focused on in all classes was Mathematics. Each teacher was a content specific teacher and only taught

Mathematics, Science, and Writing. Teachers taught two groups of students; only the morning group from each teacher will be looked at in this project.

### Assumptions

Some assumptions made for this project were that the teachers who instructed using the class set of iPads, used the iPads effectively and as a part of their everyday instruction. Another assumption was that the students enjoyed this type of instruction and that it also fit their learning style. During this research it was assumed that the teacher in each classroom was a well-rounded, experienced teacher that most students enjoyed having as their teacher. The researcher also presumed that the subjects were all similar in demographic, academic abilities, and technological experiences. The last assumption was that attendance was a problem in the high poverty school district.

### Hypothesis

Students who received mathematic instruction using iPads would have a higher attendance rate than student who did not receive mathematic instruction using iPads.

### Null Hypothesis

Students who received mathematic instruction using iPads would not have a higher attendance rate than student who did not receive mathematic instruction using iPads.

### Significance of the Project

This project was pertinent because of the increased poverty rates in a small agricultural school district and the increased poverty all over the United States; disadvantaged children needed a motivation to come to school. Research showed that “new technologies can help teachers deliver education in sync with various learning styles and content knowledge gaps” (Green, 2010). “Technology can reduce the educational disparities created by race, income, and region; and accommodate differences in learning” (Imel, as cited in Smink & Reimer, 2005). Educational Technology and Individualized Instructions were researched as effective strategies to get disadvantaged students to increase their school attendance (Smink & Reimer). iPads being used in the classroom for instruction was one way this project looked at increasing attendance rates. If a positive result occurred, this project showed that the iPads used for instruction might have been effective strategy to get students of poverty to school. Some other factors that may have played into a positive result was the subjects being studied, the quality of the teacher, prevention and intervention efforts in place at the school, and the subject’s home environment. If the results did not show a relationship, then there may not have been an exact correlation between iPads and attendance. The research may have needed to go on for a longer period of time, the attendance rate was not a problem for the school district, or other factors played a role in the

results. The researcher may have also considered other measurements to gauge the impact of the effect of using the iPad for instruction.

### Procedure

The project, which had been approved by the administration, began after two classrooms had thirty iPads integrated into the classroom as a tool to engage and enhance learning. The iPads were not purchased as a function of this research, it was something the school had already done and the researcher wanted to look at a possible correlation to improved attendance.

The iPads were used in a one to one ratio where each child had access to an iPad for use. Each student had an iPad that they used in multiple ways, in multiple subjects, facilitated by the teacher. The iPads were used in everyday instruction. Data was collected using Skyward to take attendance each day. Attendance was calculated by the amount of days possible (number of students times the amount of school days) divided by the actual days students attended. Attendance is counted for a student who came to school for any part of the school day.

### Definition of Terms

Attendance is defined as students who come to school at any part of the day and attended the same school for the entire school year.

Acronyms

MBA. Math Benchmark Assessment

SES. Socio Economic Status



## CHAPTER 2

### Review of Selected Literature

#### Introduction

For many children of poverty, school may have been a place where they felt safe, successful and could build relationships. Unfortunately, “absenteeism is the factor that is most closely correlated with dropout rates. Due largely to the effects associated with residential mobility in children’s health, disadvantaged children are more likely to be chronically absent from school which has an effect on early cognitive development (Ready, 2010). “School can help turn children’s lives around, but only if the children show up” (Jensen, 2009, p. 10). Jensen wrote that students of poverty felt a sense of alienation from their schools and believed that nobody cared. These children often gave up (Mouton & Hawkins, 1996). “Children of poverty needed a caring, dependable adult in their lives and it was often a teacher to whom children may look for that support” (Jensen, p.11). However, the problem schools faced was getting their children of poverty to attend school. The attendance problem for children of poverty started at an early age. The article “Curbing Chronic Absence in the Early Grades” by Chang (2010) stated that attending school regularly during the early elementary year was essential for young children to gain the basic social and academic skills that equipped them to succeed long term in school. “The impact was most profound for children in poverty, for whom poor kindergarten attendance predicted low

fifth-grade performance” (Chang, p. 46). Chang (2010, p. 46) also stated “...thousands of our youngest students are at risk because they are chronically absent, missing 10 percent or more of school over the course of an academic year.” Jensen wrote that students of poverty had chronic stress in their lives, which was linked to over 50 percent of all absences (Johnston-Brooks, Lewis, Evans, & Whalen, 1998), impaired attention and concentration (Erickson, Drevets, & Schulkin, 2003), reduced cognition, creativity, and memory (Lupien, King, Meaney, & McEwen, 2001), and reduced motivation, determination, and effort (Johnson, 1981). Students of poverty may have seemed uninterested or uncaring, but the issue was that they were often missing key content and felt lost or were not in class enough to keep up (Jensen).

#### How do students of poverty achieve?

“The percentage of Americans struggling below the poverty line in 2009 was the highest it has been in 15 years as reported by the Census Bureau ... With the country in its worst economic crisis since the Great Depression, four million additional Americans found themselves in poverty in 2009, with the total reaching 44 million, or one in seven residents” (Eckholm, 2010). Schools have struggled to help the disadvantaged students achieve. Chang (2010) wrote classroom dynamic may have played a role in classroom absences and achievement. If a classroom had low level of chronic absences, it is often a sign that a teacher was engaged in

exemplary practice such as some form of exemplary practice, student incentives or parent communication that got students to school.

Jensen (2009) believed that building a relationship was one of the most vitally important factors in building healthy social and emotional development. Students of poverty often lacked healthy relationships in life. Many teachers have worked to build healthy, consistent and academically beneficial relationships with students. Building these strong relationships between teacher and student and student-to-student, showed improved reading and math performance, higher attendance rates, lower retention rates, and fewer special education referrals (Hampton, Mumford, & Bond, 1997). Hattie (2009, p. 119) wrote “in classes with person-centered teachers, there is more engagement, more respect of self and others, there are fewer resistant behaviors, there is greater non-directivity (students-initiated and student-regulated activities), and there are higher achievement outcomes.” Cornelius-White researched that teacher-student relationships had an effect size of 0.34,  $d=72$  (as cited in Hattie, p. 118). This suggested that student and teacher relationships played a very important role in children’s success at school.

Jensen (2009) also stressed how important student engagement was for students of poverty to be successful. In low poverty schools, teachers reported that 12 percent of their teaching time was spent on classroom discipline and in schools whose populations are more than 40 percent low-income spent more than 21

percent (Jensen). This means that in poor schools teachers are spending up to five weeks of time on “power and control struggles” (Jensen, p. 134). A clear link has been established in the research showing achievement improves as a function of student engagement. “Engaging instruction is any strategy that gets students to participate emotionally, cognitively, or behaviorally. Engagement happens when you as an instructional leader stimulate, motivate, and activate. Engagement can result from fun games, intellectual challenges, social interactions, and your own enthusiasm” (Jensen, p. 134). Jensen stated that engagement happened when students chose to attend, participate, and learn. Letting students take charge of their own learning was one of the most powerful ways to engage students (Jensen). “Students actively participate in their own learning, get involved in making decisions in the course of their study, conduct vigorous research, think of idea for projects, and use technology to make discoveries based on their choices” (Jensen, p. 136). “They are self-regulated and come up with learning goals and problems that are meaningful to them. These students are more likely to find passion, excitement, and pleasure in learning” (Jensen, p. 139).

#### Motivating Students of Poverty to Achieve in Math With Technology

Bandura’s (1997) social cognitive theory outlined that self-efficacy or self-confidence towards learning was one factor that influenced achievement and learning. Students were more likely to engage in certain behaviors when they believed they were capable of executing those behaviors successfully (Ormrod,

1999). Pintrich decided to test the various models of motivation and emphasized the need for additional research on how classroom practices can be changed to foster adaptive motivation and self-regulation (as cited in Hughes, 2012). One area examined was the use of technology in the classroom and its link to motivation and self-confidence. Confidence in the use of technology may have led to confidence in a task, which Pintrich believed would have led students to self-regulation and increased productivity (Pintrich, 2003).

Stepp-Greany found that students benefitted from the use of technology in classrooms included “motivation, improvement in self-concept and master of basic skills, more student-centered learning and engagement in the learning process and more active processing, resulting in higher-order thinking skills and better recall” (as cited in Hughes, 2012, p. 8). Stepp-Greany (2002) also cited the result of task confidence gained through the use of technology, which brought the research back to Bandura’s theory of self-efficacy (Ormron, 1999) and Pintrich’s (2003) model of motivation through social cognition.

#### Game Theory in Mathematics Achievement

“Visionary mobile learning devices, such as the iPad are expected to have a valuable role in 21<sup>st</sup> century learning if teachers and students could properly utilize the device’s potential” (Banister, Bauleke & Herrmann as cited in Carr, 2012). “Mathematic games can be used to increase engagement, motivation and student learning” (Clark & Ernst; Houizenga, Admiral, Akkerman, & Dam as

cited in Carr). “Like any lesson plan based on educational objectives, most games are objective driven, in which students had a venue for fun, interactive tools to learn educational concepts” (Hoffmann as cited in Carr, 2012). Students who used games had multiple opportunities for real-world content application followed by positive encouragement or corrective feedback (Allsopp et al. as cited in Carr). Hattie (2009) synthesized that feedback ( $d= 0.73$ ) was among the most powerful influences on achievement (Hattie, p. 173). Hattie’s research suggests “the most effective forms of feedback provide cues or reinforcement to the learner, are in the form of video, audio or computer-assisted instruction feedback, or relate feedback to learning goals” (Hattie, p. 174).

Two studies that looked at the incorporation of game based learning applications using a table “offer a promising sign for the potential use of technology and game-based learning to positively impact mathematics achievement” (Ash, Houton Mifflin, & Wright as cited in Carr, 2012). One study that was done in a diverse Hong Kong primary school found that the game based applications showed enhanced motivation to learn, stronger development of cognitive skills and improved learning strategies (Li & Pow as cited in Carr). The other study took place in a California Middle School where the students had full access to iPads. The study also found that students were more motivated and attentive in Algebra when compared to students who were only using Algebra textbooks. The change the study saw in behavior also has a positive correlation in

achievement. Test scores showed a 19% increase for the students who were using the iPads in algebra. (Houghton Mifflin Harcourt as cited in Carr).

### Summary

Children of poverty may have faced many struggles, but good attendance at school may be one factor that had positively impacted their lives. However, the research showed that absenteeism is high amongst children of poverty, which led to children dropping out of school (Jensen, 2009, p. 10). Smink and Reimer (2005) outlined effective strategies to improve student attendance: Early Intervention (family engagement, early childhood education, early literacy development), Basic Core Strategies (mentoring/tutoring, service-learning, alternative schooling, after-school opportunities), Making the Most of Instruction (professional development, active learning, educational technology, individualized instruction, career and technical education). These strategies appear to be independent, but as Chang (2010) stated, getting children to school regularly during their primary years was essential for long-term success in school. One way to get children of poverty to have regular attendance was to engage the child in learning. When students were engaged, they were attending, participating, and learning (Jensen). One way to get the students to engage was the use of technology to actively engage students in their own learning (Jensen). Students who had access to technology, such as an iPad, had access to mathematic games. Mathematic games increased engagement, motivation, and student learning (Clark

& Ernst; Houizenga, Admiral, Akkerman, & Dam as cited in Carr, 2012).

Students, who were engaged, experienced mathematical academic success.

Experiencing success motivated the student to attend school (Jensen).



## CHAPTER 3

### Methodology and Treatment of Data

#### Introduction

The researcher wondered about whether or not the integration of iPads in the classroom might influence student attendance with students of poverty. The research (Jensen, 2009) suggested that students of poverty are more likely to be chronically absent. Jensen also suggested that engaging instruction is one strategy that showed improved achievement. The researcher's main objective was to better understand whether or not the use of iPads in the classroom was connected to improved attendance at a high poverty school.

The students in the two classrooms received math instruction for ninety minutes, integrating the iPads when possible for the 2012 and 2013 school year.

#### Methodology

The study took place in the educational setting of an elementary school in Eastern Washington. The purpose of this study was to compare the classroom average attendance of students in classrooms with iPads to classrooms without iPads.

The research method for gathering the data was an Action Research design. Action Research provided the teacher researcher with a method for solving

everyday problems and allowed for the teacher to reflect on their daily routine. The process began with identifying an area of focus, then the data was collected, analyzed, and interpreted. Then teacher researcher used this information to create a plan of action for the identified problem.

The determine if there was an effect the data was tested by using the average daily attendance of all iPad and non-iPad classrooms and the average daily attendance for the Elementary District for the 2012-2013 school year.

The researcher was given approval by the school district to study this phenomenon and to use the school's data.

### Participants

The participants in the study were the students from the researcher's Second Grade classroom, the other Second Grade classroom in the building, a Fifth Grade classroom in the building, and another Fifth Grade classroom from another elementary school in the same district.

### Instruments

The researcher used classroom attendance and school attendance to obtain data on the average amount of days attended by students in each classroom.

### Design

The researcher used an Action Research design to conduct this study. This design was used because the researcher wanted to investigate whether or not

implementing iPads into a classroom could affect student attendance. The researcher used an average to test the data for an effect

### Procedure

The researcher and the other iPad pilot teacher attended a two-day training on implementing iPads into the classroom. The focus of the professional development was on math integration. The researcher had looped with her classroom of students, so the implementation and student training went fairly quickly in the first couple weeks of school. The iPads were used daily in each class and used in a variety of ways. For example, the students used the iPads independently, in partners, shared within a group of three or four, whole group, or in centers where all children had an iPad, but used the same application. The focus of this study was the use of the iPads during mathematics.

At the end of the school year the data was compiled for attendance and mathematics assessment. The attendance was gathered for each iPad classroom and non-iPad classroom from the same grade level. Attendance was collected by the school's student management software. Attendance was calculated by the amount of days possible and multiplied by each student in the class, then divided by the amount of days attended by all children in the classroom for the school year.

### Treatment of the Data

The data for analysis was comprised of the average daily attendance for each classroom. The data collection for attendance began on the first day of school in August 2012 and continued until the end of school in June 2013. The attendance data was collected and analyzed to understand the possible effects that iPads had on the attendance of students of poverty. Attendance data for school district, kindergarten through fifth grade was also collected and analyzed.

### Summary

The researcher used an Action Research design to better understand the potential effect iPads had on classroom attendance on Second Graders and Fifth Graders for the school year of 2012-2013.

## CHAPTER 4

### Analysis of the Data

#### Introduction

The researcher conducted a study to seek understanding about the use of iPads in the classroom and the possible effect on the use had on attendance. The students received mathematical instruction for ninety minutes a day, five days a week. The iPads were integrated daily in multiple ways during that time. For example, the students used the iPads independently, in partners, shared within a group of three or four, whole group, or in centers where all children had an iPad, but used the same application. Specifically the researcher wanted to see if the iPad classrooms provided measurable evidence to better understand the classroom attendance of the iPad classroom. The researcher also wondered if there might be an impact on attendance as compared to the school district average. The research (Jenson, 2009; Romero & Lee, 2008) showed that students of poverty had a higher chance of school absenteeism, which also led to academic challenges and high drop out rates. The researcher wondered if students that had the opportunity to use iPads in the classroom, might consider the iPads as a motivating factor that may appear in improved attendance rates.

### Description of the Environment

The participants in the study were students from the researcher's second grade classroom and a fifth grade classroom as the iPad classrooms, and a second grade classroom and fifth grade classroom in the same district that did not use iPads. The school district is located in a small rural agricultural community that resides along the Columbia River. The intention of the study was to look at the possible effects from instruction with iPads had on attendance rates of high poverty students. The classrooms consisted of one iPad Second Grade classroom of 24 and the other non-iPad Second Grade classroom of 21. The Fifth grade classrooms contained 24 students in the iPad classroom and 26 in the non-iPad classroom. All students were considered students of poverty because the district is listed as 100 percent free and reduced lunch on the Office of Superintendent of Public Instruction (OSPI) website.

### Hypothesis

Students who received mathematic instruction using iPads would have a higher attendance rate than students who did not receive mathematic instruction using iPads.

The data indicated that there was a minimal difference in attendance rates among the four classrooms being studied. Based on the daily classroom average

of the non-iPad classrooms vs. the iPad classrooms the data suggests that there was less than 1% difference in the average daily attendance.

### Null Hypothesis

Students who received mathematic instruction using iPads would not have a higher attendance rate than student who did not receive mathematic instruction using iPads.

### Results of the Study

The results of this study demonstrated that the students who used iPads during their school day did not have a statistically higher attendance rate than those students who did not use iPad during their school day based on the daily average attendance rates of the classrooms in the study. This does not suggest that at a different time, different school, the results wouldn't be different.

The null hypothesis was supported in that there was less than 1% discrepancy in the daily average of all classrooms being studied. The iPad classrooms had a daily average attendance of 97.62 percent, the non-iPad classrooms had an average of 97.57% and the district attendance average was 98.75%. When the researcher compared the attendance rates of the groups studied, it showed that there was no statistical difference compared to the school district attendance rate with the iPad classrooms. The researcher failed to reject the null hypothesis.

Table 1 shows the daily average of each classroom used in the study and the school district for the 2012-2013 school year.

Table 1

*Average Daily Attendance for 2012-2013*

<u>Classroom</u>	<u>School days attended</u>	<u>Total school days</u>	<u>Percentage</u>
iPad class A	4209.5	4320	.9744
iPad class B	4225.5	4320	.9798
Sum of A & B	8435	8640	.9762
Non-iPad Class C	3704	3780	.9781
Non-Pad Class D	4550.0	4680	.9723
Sum of C & D	8254.5	8460	.9757
District K-5			.9875

Attendance was collected by the school's student management software. Attendance was calculated by the amount of days possible and multiplied by each student in the class, then divided by the amount of days attended by all children in the classroom for the school year.



## Findings

The data showed an insignificant difference between the student's attendance in iPad classrooms and the non-iPad classrooms. There was less than 1% difference in the attendance of the iPad classrooms and the non-iPad classrooms. Therefore, students who used iPads as a tool for mathematic instruction showed a statistically insignificant higher attendance rate than students who did not use the iPads for mathematic instruction.

Further research was done to analyze the districts daily average attendance. The data showed that the district had a 98.75% daily attendance rate for grades kindergarten through fifth grade. Schools with average daily attendance rates higher than 97% rarely have a problem with chronic absence (Bruner, Discher and Chang, 2011). The findings showed that the high poverty school district did not have an attendance problem.

## Discussion

The research suggests that students of poverty often are at high risk for school absenteeism. One strategy that was researched was Jensen's (2009) idea of engaging students of poverty in meaningful learning experiences. The researcher created student-centered experiences by incorporating the iPad into mathematical learning in hopes to motivate the students to come school.

However, once the results were analyzed, the researcher found that the classes, iPad and non-iPad, did not suggest that attendance rates varied whether an iPad was in or not in the classroom. The researcher then looked at the school district average, kindergarten through fifth grade. Upon a closer review of historical attendance rates, it was determined that this school district had most kids coming to school daily. The school district does not have an overwhelming concern for attendance for the students of poverty.

There are a number of limitations may need to be considered in the research project. One was that the school district had a high attendance percentage before the study was conducted. Another limitation to be reflected was that the school was considered 100 percent free-reduced, so the school as a whole is a high-risk school. The school may already have many supports, interventions and preventions in place for their students of poverty.

From this action research project, implications for future research include looking at specific students of poverty who have attendance problems to see what can be done or what motivates them to come to school and studying the long term effects the iPad has on a child's educational outlook.

### Summary

The research project focused on the average attendance of the subjects studied. The research project also looked at the attendance of the school district.

The researcher used a percentage of school days attended model to compare the iPad and non-iPad daily attendance rates of the 2012-2013 school year. The data did not show a significant difference between the iPad and non-iPad classroom attendance rate for the 2012-2013 school year. The researcher failed to reject the null hypothesis with less than 1% difference in the attendance of the iPad classrooms and the non-iPad classrooms. The classrooms that used iPads did not show a higher attendance rate than classrooms that did not use iPads.

The researcher then looked at the average attendance of the school district to compare the groups studied. The researcher found that the school district had 98.75 percent present attendance rate during the 2012-2013 school year. The researcher concluded that the school district did not have an immediate attendance problem.

## CHAPTER 5

### Summary, Conclusions and Recommendations

#### Introduction

The study was designed to determine if using the iPads for instruction may contribute to increasing student attendance for high poverty students. The students received 90 minutes of mathematical instruction five days a week. The iPads were integrated into the math instruction when possible in a variety of ways. The iPads were integrated into the grade level standards to increase engagement, academic success, and classroom attendance.

#### Summary

In the larger sense, the researcher was interested in understanding if integration of iPads into high poverty classrooms might increase student attendance. The data was obtained from August 2012 to June 2013 from two iPad classrooms, two non-iPad classrooms, and kindergarten through fifth average across the district.

The data showed an insignificant difference between the attendances in the iPad classrooms compared to the non-iPad classrooms. There was less than 1% difference in the attendance of the iPad classrooms and the non-iPad classrooms. The students who received the iPad intervention did not have a statistically higher attendance rate than those who did not receive the intervention. The data was also insignificant compared to the elementary district attendance average.

Further research to explore this research question may be done by looking at individual students that had shown an attendance problem previous to the use of iPads. This could be done in a case study model and include student surveys to support the attendance data.

### Conclusions

Based on the data obtained, there was less than 1% difference in the attendance of the iPad classrooms and the non-iPad classrooms so the null hypothesis failed to be rejected. The study did not statistically show that integrating iPads into a high poverty classroom might increase attendance.

### Recommendations

The researcher concluded that using iPads as an intervention for students of poverty was not statically proven to increase their attendance. However, the researcher came to understand that the school district does a very good job at getting their students' to school in general.

To further investigate if the iPads would have a positive effect on the attendance of high poverty students, the researcher recommends that more research is done in a school where there is a smaller poverty rate, and there are not other interventions already in place. More research could also be done in a case study model looking at individual students. The researcher could use surveys completed by the student and their parent to look at the child's view and parent's view of using the iPad in the classroom as a tool for learning.

The researcher will continue to use the iPads as a tool for instruction in her classroom based on the engagement, excitement, and success that the students had in her classroom in using the iPads. The student engagement using the iPads was incredible to see. On most occasions, the students would be authentically engaged in the math lesson using the iPads and excitedly sharing their progress or success they had with the math application being used in the lesson. The iPads didn't lose their novelty as the year went on; it only increased as the students became more familiar and confident in using the iPads for learning. Students would ask on a daily basis if they would be using the iPads, even though they did use them everyday, they just had to make sure. One student even asked if she could have the iPad if she graduated high school. The motivation and engagement the iPad brought to the learning in the researcher's leads her to recommend for a larger study on iPads and student engagement to show relevance to increased attendance.

## Reference:

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Chang, H. (2010, May/June). Curbing chronic absence in the early grades. *Principal*, DOI: [www.naesp.org](http://www.naesp.org)
- Eckholm, E. (2010, September 16). Recession raises poverty rate to a 15-year high. *The New York Times*. Retrieved from [http://www.teamsters952.org/Recession\\_Raises\\_Poverty\\_Rate\\_to\\_a\\_15-Year\\_High\\_-\\_NYTimes.com\(1\).pdf](http://www.teamsters952.org/Recession_Raises_Poverty_Rate_to_a_15-Year_High_-_NYTimes.com(1).pdf)
- Green, E. (2010). Personalizing education. *School Business Affairs*, 76(4).
- Hattie, J. (2009). *Visible learning, a synthesis of over 800 meta-analyses relating to achievement*. (1st ed., Vol. 1). New York: Routledge.
- Jensen, E. (2009). *Teaching with poverty in mind, what being poor does to kids\' brains and what schools can do about it*. Alexandria, VA: Assn for Supervision & Curriculum.
- Pintrich, P. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology*, 95(4), 667-686. doi: 10.1037/0022-0663.95.4.667
- Romero, M., & Lee, Y. (2008). The influence of maternal and family risk on chronic absenteeism in early schooling. *National Center for Children in Poverty*.
- Smink, J., & Reimer, M. (2005). Fifteen effective strategies for improving student attendance and truancy prevention. *National Dropout Prevention Center/Network*.
- Step-Greany, J. (2002). Students' perceptions on language learning in a technological environment: Implications for the new millennium. *Language Learning and Technology*, 6(1), 165-180.