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Using the iPod Touch to Increase Reading Test Scores in EL Students

by

Sarah J. Klinnert

A Thesis

Submitted to the Graduate Faculty of

St. Cloud State University

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Abstract

Teaching in public schools today is certainly a challenge. There are many factors that go into teaching and many standards that need to be met. There is a growing English Learner population in Central Minnesota. Standardized tests are given many times a year to measure that students are learning the content at a specific grade level.

For some of the EL students it may be the first time that they have entered a school. Other EL students were born in Minnesota and speak a different language in the home. Some of the students live a life of poverty and some do not. All of the EL students are placed in the grade that correlates with their age and they may not have had the proper foundational skills taught to them in reading. In the school in this study the test scores have continually went down over the past several years. District teachers and administrators wanted to try a piece of technology in the classrooms that could help improve the reading skills.

Technology is also a tool that the schools have used to improve reading skills and test scores. In this study the EL students had access to a device called an iPod touch. Technology is rapidly changing in the schools and it can be costly to the school. This study focused on a fifth grade class and compared test scores from two years earlier. Schools have been driven in many directions from these mandated test scores. There can be penalties for failing and rewards for passing. This study showed that technology used one hour a week had no statistical significance on student achievement.

Acknowledgements

This is dedicated to all of my past and future EL students. Test scores cannot measure your worth as a person. They cannot measure your joy, happiness or all of the lessons you have taught me and I have taught you. Also, to my loving parents, you always told me I could grow up to be whatever I wanted. I thank you for always believing in me.

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Chapter 1: Introduction

In today's world, working as a teacher can have many different challenges. All over the United States of America schools look different. There are contrasting populations of ethnicities, economic situations, buildings, teachers and specialties. With the changing of times computers have made such a difference in what we do in our everyday lives. The rising advances of technology are taking over multiple ways in our personal and professional world.

With the advancements that are created every minute of every day it is hard for teachers to keep up with the latest inventions to keep our students current in technology. Throughout the years families went from one television in the home to a variety of technology including: 3G and 4G cell phones, Wii, laptop computers, iPads and iPods.

Over the years high stakes testing has been on the minds of all teachers. Under the directive of No Child Left Behind (NCLB) all students are tested every spring to ensure that they and their schools have made academic Adequate Yearly Progress (AYP) (Proell, 2011). If AYP is not met the districts and the schools are penalized. It is not only the districts and the schools that are penalized it is the students themselves. The students and families may not have access to money that could help them advance in their academic career.

For example there is a school district in Central Minnesota where English Learners (EL) are placed into the grade that correlates with their age regardless if they have any skills in listening, speaking, reading or writing in English. Since many

of the students that enter the school have no prior schooling and no prior English skills, so they are significantly below grade level. For example, there might be a sixth grade student that enters the school and is learning the alphabet and letter sounds. These students are still required by NCLB to take the state mandated tests at the sixth grade level. These students do not have the skills yet that they need to pass this test or even attempt the test. Teachers and administrators need to recognize this issue. This is setting the students up for failure.

It is unreasonable to expect ELs to perform comparably to their native English-speaking peers in their initial years of schooling (hence the need for standards specific to ELs) and holding them to this expectation too early in their educational careers can be detrimental to their academic progress, not to mention their self-esteem. The problem enters when students are not pushed to go beyond this stage over time, are presumed to be at an elementary level, or are misdiagnosed as having educational disabilities by teachers unfamiliar with the needs of ELs. (Laternau, n.d.)

By having challenges like having limited English skills, state mandated tests and students performing under grade level, teachers and administration have to find ways to motivate students to learn English rapidly. Reading and writing skills are needed to pass these state mandated tests.

As previously mentioned school district in Central Minnesota was fortunate to receive a grant from the Minnesota Department of Education, to receive a program in which iPod touches were assigned to EL teachers and their students. The grant states that every EL teacher was given the opportunity for training on the new technology. "Staff were given the opportunity to explore and integrate technology, both for their own instructional practices, as well as for the direct work with students"

(Miles, 2011, p. 4). Then it was decided that the individual teachers were going to be responsible to use the tools to help the students with reading fluency.

Statement of the Problem

In Central Minnesota, the school district that this study is based on has one school in particular that serves a high population of at-risk students; the school is currently is approximately 88% free and reduced lunch and 41% EL. With the current economic restrains and the Limited English Proficiency (LEP) rate of students the school on a whole is not making Adequate Yearly Progress (AYP). Teachers and administrators are determined to try to remedy this problem by integrating new technology into the 120 minute reading block during the regular school day. The new technology will be the use of iPod touches.

Background and Need for the Study

The evaluation will look at using the iPod touches in a very specific lesson plan format to see if it will increase reading fluency in fifth grade students. The students will read passages into the iPod touch by recording themselves orally. The students will be using the voice memo application on the iPod touches. By using this new technology integrated into the reading curriculum results will concur to see if using the new technology will potentially raise the scores on a variety of mandated tests. The test that the research will concentrate the most on is the Northwest Evaluation Association (NWEA) test. This test is referred to in this experiment as the MAP test. This test is taken three times a year. It is given in the fall, winter and spring of the academic year. This test mirrors the state mandated tests but also allows the

measurement of growth for the student. Also by looking at the NWEA test scores teachers and administrators can get an idea of how the students will perform on the state mandated tests. The two other tests that will be also looked at in the Data portion are the Test of Emerging Academic English (TEAE) test, and the Minnesota Comprehensive Assessment (MCAII) test.

Research Questions

1. Does the use of iPod touches in the classroom enhance reading scores?
 - a. How can the use of iPods in the classroom benefit EL students?
2. How can the data be measured to ensure students are using the iPods appropriately for academic use?

Limitations of the Study

In this study there may be varying levels of English proficiency between students. Some students may be new to the country or to the school district. Some students may have had EL services in the past ranging from 2 to 5 years. Regardless of how much prior schooling these students have had they are still not performing at grade level. They are all performing at levels that are under their English speaking peers.

Significance of the Study

In doing this study the findings will help teachers and administrators look at the significance of technology, specifically iPods to see if using these tools during the designated reading block will improve test scores. In using iPod touches in the schools, students can keep up with updated technology and be advanced in ways

that at-risk students may not have at home. iPod touches in the classroom has been a new integration throughout the United States. There are many schools that are embracing this new technology to give students hands-on learning for individual use. Students can manipulate lessons right at their fingertips. Lessons can be transformed automatically in the classroom from being teacher centered to student centered. This type of cutting edge technology is interesting to the student and motivates learning in a new way.

Chapter 2: Literature Review

Technology and EL Students

Reading and writing skills are basic necessities that EL students need to learn in school. Throughout the years teachers and administrators have been using different curriculums and approaches to teach reading and writing. With the changing of times and the new technology that is in our everyday lives, technology has been embraced.

In 2006 there were four action research studies that were conducted using Apple iPods with EL students to promote reading, writing, listening and speaking skills. These projects were conducted in two elementary schools and two middle schools in rural and urban cities. "The findings indicate that overall writing skills and vocabulary development improved in three studies and one study reported a significant increase in comprehension skills as measured by standardized tests" (Patten & Craig, 2007, p. 40). The new technology that has been used in schools is transforming student learning. This was the beginning of introducing cutting edge technology into the classroom. In 2006 iPods came into society being used as a tool for listening to music and podcasts. This was only the beginning. Today the capabilities of the newer version of the iPod touch have exceeded the previous iPod. With the more recent technology available to schools, teachers and students can use new strategies to improve literacy.

This is one of the strategies that have been used in the Central Minnesota school district and all over the United States. The Central Minnesota school district is in the process of using iPod touches to improve literacy.

The students were given opportunities to use iPods during the regular school day. Teachers decide what exploration of iPods is imperative to the learning process. With students being naturally curious about the new devices time was allotted for a guided discovery session with the students. This allowed them time to learn the mechanics of the device and how to use it. The students were given the opportunity to explore and integrate technology in a variety of ways.

Within the iPod reading program, students were able to use a variety of educational strategies along with applications within the devices to focus on reading fluency in a variety of ways. Students were also given the chance to explore digital consumption and creation in a variety of learning opportunities. (Miles, 2011, p. 4)

The iPod touch was created by Apple. Apple is an innovative company that recognizes the value of getting Educators to use their products; it is well supported for education (Proell, 2011). Apple in Education has a profile on the internet dedicated to education and teaching. There are many uses for the iPod. They have great educational benefits and go beyond traditional uses like listening to music and playing games. There are many educational applications (apps) that can influence math, reading, vocabulary, science and social studies. The section that is relevant to this study is the section that is dedicated to improving literacy with iPod touch.

The iPod touch literacy program has been used in a school in Escondido California. Escondido purchased one iPod touch cart per classroom, providing one

device for each student. Each iPod touch would be an individual student's to use at the school for the entire year. The article did not specify how many hours a week that the iPods would be used. This school district has a large population of EL Spanish speaking students. Apple in Education has reported reading fluency increases by using this program.

In using the iPod touches the students were able to record their reading into the iPod. By listening back to their oral reading the students were able to use a self-correction method to build fluency and comprehension skills. The students were able to critique themselves reading and from doing this they were able to recognize mistakes that were made automatically. By doing this type of self-correction the project became student centered.

After using her iPod as a voice recorder for personal use, Kathy Shirley, Technology and Media Services Director of the Escondido Union School District, saw its potential as a learning tool for students to improve their fluency and comprehension. With its large population of English language learners, Central Elementary School was the perfect place for Shirley to introduce these new strategies. (Apple, n.d.)

From this positive experience in Escondido California many other schools became interested in the program. Teachers and technology integrationists from all over the school started investing time and money into the programs in hope of positive results.

The method that the Escondido School District used was to have the students read a passage orally into the iPod touch for an allotted period of time. The teacher's goal was to see how many words per minute each student could read. The teacher's then confirmed that the more words per minute each student could read, the better the reading comprehension of the student. In doing this method where each student

has their own iPod touch to work with and were able to track their own progress, the teacher had to spend less time with each student one-on-one. In Escondido the teachers agreed that the students should be in charge of their own learning and progress of word recognition. “Besides the inefficiency of having to work separately with each student, the process made it difficult for students to track their own improvement” (Apple, n.d.). For growth to occur in reading skills, students need to learn self-correction methods. In the past, teachers spent much of their time pointing out errors to students. By doing this, not all errors were addressed or even caught. This also meant that the teacher was always giving feedback.

Throughout the year different methods of teaching were piloted in the Escondido School District. Shirley decided to gather a group of intervention teachers and shared her experience using the iPod touch devices. The teachers were intrigued with the idea and started working with Shirley giving her baseline information on the students with the highest needs. The teachers started integrating the iPod touches into their Language Arts exercises. They collected data over a 6-week period of time to see if there was any type of growth in the student’s language skills.

After a six-week trial, student progress exceeded six times the rate considered normal for that period of time. Teachers also found that when the students were able to record and—for the first time—hear themselves read, they became more engaged, motivated, and invested in their own learning. Students could get instant feedback, and it changed the way they learned. (Apple, n.d.)

By giving students new opportunities that support learning and growth along with integrating new popular technology the students maximized and enjoyed their reading lessons.

With large populations of immigrant children entering the U.S. school system it is imperative that teachers take into account the degree of limited English skills these students have. Immigrant children have varying degrees of background knowledge considering their prior knowledge and prior schooling. Some students are coming from refugee camps that have little or no school available to them. There are other students that go to school and learn how to read and write in their native language. By having these types of skills, students can learn a second language more quickly. Some EL students may catch up to their English speaking peers faster than others. It is hard for teachers to gage how fast to accelerate their school work, lessons and assignments to ensure that the students are getting as much out of their education as possible. By using iPod touches students can control and differentiate to their abilities. “By empowering ELLs to take control over the direction of their learning, managing the speed of their learning, maintaining their own pace, and developing their own identity as English speakers, they are more easily integrated into academic and social worlds” (Patten & Craig, 2007. p. 41).

Language in the Classroom

Traditionally in the classroom teachers have been the main center point of education in schools today. Teachers deliver the lesson and the students listen. In classroom situations “sixty-eight percent of each day is spent in communication, with

the teacher doing the talking and students listening” (Kervin & Vardy, 2007). EL students that can comprehend oral English language are able to follow directions and complete tasks in school. If they do not comprehend the directions of an assignment they will not be able to meet the requirements that the teacher is asking them to do.

Literacy has been measured in the past by reading and writing test scores.

Students need to be able to participate in assignments to obtain passing reading and writing skills.

We have known for some time there are significant connections between literacy, talking and listening. In particular, children who are proficient in oral language that is, talking and listening are able to use more complex language and better understand the conventions of language. (Kervin, 2007, p. 58)

Oral communication and understanding in our classrooms are substantial for EL students to learn skills.

For EL students to gain confidence and knowledge about their new acquired language they must be able to use it. The students must practice language skills. Language skills lead to literacy skills. The more a student uses the language and vocabulary in conversation English as well as academic English the chances of the student retaining it becomes greater. In some situations teachers do not allow students to talk in class. EL students working with their English speaking peers in small groups or allowing the students to participate in class is another way to increase oral language production.

In the past classrooms were designed with chalkboards, overhead projectors, books, pencils, and pens. Today new technology is available for use in the classrooms. In many school situations teachers are given opportunities to have

available resources for their students. "With the incorporations of computer based technologies, associated peripherals (for example, digital cameras, scanners) and mobile technologies such as iPods" (Kervin, 2007 p. 58). By using these new technologies the classroom can be transformed into a culture of student centered learning with multiple chances for oral language to occur. EL students along with all students have a variety of learning styles. The traditional learning style that is used is that the teacher is up in front of the class teaching and the students are sitting in desks listening. This is a lecture based style. By using technology such as the iPod touch teachers are able to tap into a different learning styles and create a balance in the classroom.

iPods can be a very intrinsic and extrinsic motivator for EL students to learn language. An intrinsic motivator is that the students enjoy using the new technology. An extrinsic factor of using iPod touches is that it seems to naturally adapt to this kind of hand held equipment and push it above and beyond its capabilities. It is a current device that is stimulating for them to use as a learning tool. Andy Berning, a technology teacher in Carrollton-Farmer Branch, Texas states that their school is using iPods for teaching English as a Second Language. He also says that the anecdotal data so far indicates that it has been successful at the elementary level and kindergarten students are learning sounds up to two months faster than they did before (cited in Pascopella, 2005, p. 10).

Being able to record oral language on the iPod is a great advantage to teachers and students. When students are able to listen and speak orally their

interest in learning is influenced. “An elementary school in Arlington, Virginia also plans to use iPods for students learning to speak English and fifth graders in another Arlington school use the devices to record poems and book reports” (Pascopella, 2005, p. 10). Using language techniques in the classroom to have EL students interact with each other, technology and the teachers is a strategy that many schools all over the United States are beginning to value.

Purposeful Curriculum Integration

The use of iPods in the classroom is a powerful educational tool. Teachers who use the iPods need to teach their students the difference between using this device as a game or extracurricular activity compared to using it for educational purposes. It is important that the teachers themselves have training on how to appropriately use the iPods and integrate it into their reading curriculum so that the students are being responsible for learning.

Naturally students like to explore the device and push limitations. In one school the teachers allowed exploration time before the project to eliminate unconstructive activity time when using the iPods for educational purposes. Some of the students may have such devices compared to the iPod touch at home. In this case there is an automatic draw to the device. The students want to use the iPods for both entertainment and for educational purposes. It is important that the teacher is very purposeful with the curriculum integration to ensure that students are using the iPod touches for educational tools and not toys. In doing this the teacher needs to set

clear expectations and define the lesson explicitly so there are no miscommunications in what the students are using the device for.

In two middle school classrooms, students viewed the iPods as a hot commodity. The classroom became the cool place to be and the iPod the 'it' tool to work with. Students in both middle school classrooms went through a period of playing with the iPods before settling down and viewing them as a learning tool. (Patten & Craig, 2007, p. 43)

It is critical that teachers are able to have training time on the iPod touches so they can learn how to use the device themselves and plan thoughtful and dynamic lessons for the students to use for learning. In a school district in Central Minnesota staff had numerous professional development opportunities to better understand how to integrate technology into their lessons (Miles, 2011). Having iPod touches in the classroom should not be viewed as an extracurricular activity on a Friday afternoon to fill up time. By having the appropriate training these kind of issues can be eliminated.

The iPods alone do not teach students literacy skills needed to obtain grade level scores. Teachers are still needed to integrate the technology in a manner that maximizes learning. In a local school district teachers are able to get training on the iPod touches to do this. "Staff were given the opportunity to explore and integrate technology, both for their own instructional practices, as well as for the direct work with students" (Miles, 2011, p. 4). Sharing lesson plans between teachers and setting up a database for resources can also help support instruction for student learning (Miles, 2011). In having purposeful curriculum integration that is aligned by the Minnesota State Standards the students will have a valuable learning experience in both aspects of academics and enjoyment of using the hands-on device.

Improving Student Achievement

Test scores are looked at in every school across the United States. Teachers and administrators are looking for ways to accelerate test scores so all students are getting the education that they are required by state and national standards.

Pascopella (2005) sites that in the Detroit Public Schools the teachers and administrators are hopeful that the technology rich environment will improve test scores improve the graduation rate and steer more students toward higher education. “The consistent use of technology is a wonderful way to engage our students, particular those who are at risk for dropping out or not completing their education on time” (Pascopella, 2005, p. 10).

Many teachers and administrators are desperate to find ways to improve test scores. By incorporating iPods and other mobile devices into classrooms, they are becoming more common and is inspirational in many school districts. A school district in Minnesota reports; a component of our project is utilizing iPod touches for English Language acquisition for the English Language Learners in our district. This population has expanded rapidly in our district over the last several years (Miles, 2011). In the Central Minnesota School District the EL population has one of the lowest index rates as measured by the Minnesota Comprehensive Assessments (Miles, 2011).

The iPod touch is drawing attention from educators that are enthusiastically integrating the mobile device into their classes. It is being used to enhance reading

fluency, math skills and has capabilities that are not even known at this time (Miles, 2011).

Chapter 3: Methodology

Over the 2010-2011 school year the students in the fifth grade were able to incorporate the usage of iPods in their Language Arts (LA) block. The Language Arts block of time consisted of 120 minutes of reading, writing and word work instruction. The framework for the LA block is called the Daily 5 Café. The Daily 5 Café is divided up into mini lessons and independent work time. During this time the students were provided with a mini lesson on how to integrate the iPod touch into their LA lesson. This usually lasted 10-15 minutes and then they were given about 20-30 minutes to work with the iPod touch. At the end of each lesson the students were instructed to fill out an exit card which reviewed key terms that were integrated into each lesson. This lesson was given by the EL teacher and each classroom was visited once a week for 1 hour. Each class only had the iPods for 1 hour a week. There was one cart with 20 iPods purchased for the entire school. If the class sizes were over 20 some students had to share with a peer for the hour lesson. Most class sizes were 18-22 so there were many opportunities for the majority of the students to have a one on one ratio of student to iPod for 1 hour of the week. These lessons were taught in a mainstream fifth grade classroom so all students mainstream and EL were participating in the lesson. The mainstream classroom would co-teach the lesson with the EL teacher to provide support and help with individual needs of the students. In this situation the EL teacher was the lead teacher for the “push in” one hour a week allotted time to teach reading with iPods.

Research Questions

1. Does the use of iPod touches in the classroom enhance reading scores?
 - a. How can the use of iPods in the classroom benefit EL students?
2. How can the data be measured to ensure students are using the iPods appropriately for academic use?

Participants

The participants will include approximately 25 fifth grade EL students from one school in a Central Minnesota School District. These students are both boys and girls. There are various languages spoken in the home some include; Somali, Oromo, Swahili, Chinese, Nuer, Vietnamese and Spanish. These students receive direct EL services from an EL teacher and were in the regular classroom setting. The model is considered a “push-in” model meaning that the EL teacher is co-teaching in the regular classroom with the classroom teacher. The students in this study are considered to have Limited English Proficiency (LEP). These students are performing academically under grade level and their English speaking peers.

Materials

The students will be assigned an iPod touch, with the lesson application, (app) microphone and a book they are reading in class also there may be other written materials that go along with the school curriculum.

Examples

Lesson plans that were used during the course of the school year will be written in detail.

Procedure for Treatment Group

Throughout the school year months, October through April, the students will be using the iPod touches to record oral reading. The students will read into the iPod touch for approximately 10-15 minutes and then play back their recorded reading listening from 10-15 minutes. Then the students are required to record data of things that were the focus of the lesson. They also will submit to the teacher an exit card. The exit card is the documentation the students were working on. This will take place 1 hour per week. This will provide 23 samples of student work. Students will be responsible to listening to their own oral reading and correcting the mistakes they have made.

The student will be assigned their own iPod touch, microphone and a book that they are currently reading in class. They will be using the application (app) voice memos. They will record on the voice memo app and play it back to themselves as they read along with their chosen book.

During the other weeks of the school year the students will have other lessons with the iPod touch that will correlate directly with the Daily 5 Cafe Framework. These lessons will include samples in word work, writing, and reading text for information.

The lesson for the weeks will be will be in the table below:

Date:	Lesson:	Other notes and Exit Card.
October 25-29, 2010	Intro to Voice Memo App	How to use Voice Memo App and guided discovery on how to use it.
November 1-5, 2010	Voice Memo App record reading 10-12 minutes.	What did you notice about your reading?
November 8-12, 2010	Voice Memo App record reading 12-15 minutes.	What did you notice about your reading?
November 15-19, 2010	Word Up App	How many words can you make in 2 minutes? What was your high score and low score?
November 29-Dec, 2010	Voice Memo App record reading 12-15 minutes.	What reading strategy are you working on? (Comprehension, Fluency or Accuracy)
December 6-10, 2010	Word Power App	Students work on various pieces of writing under an app that has categories of vocabulary words.
December 13-17, 2010	Voice Memo App record reading the student's own writing 12-15 minutes.	The students are reading out loud their writing. The strategy is to monitor and fix up writing.
December 20-23, 2010	Word Up App	What prefixes and suffixes did you use to make your words longer?
January 3-7, 2011	Voice Memo App record your own writing and switch with a partner. The partner will make a mental picture and then draw the picture.	After you listened to a partner's reading was it easy for you to create a mental picture? Did you have the same picture as your partner?
January 10-14, 2011	Voice Memo App record reading with you read I read. Two students read the same book or paragraph. They listen to group reading.	How was it different to record your reading with a different person?

January 18-21, 2011	Word Pop App	How many words did you make and what was your score?
January 24-28, 2011	Countries App read text for information.	Answer the questions on the Countries App about the Statue of Liberty
January 31-February 4, 2011	Countries App read text for information.	Answer the questions about the one of the Seven World Wonders.
February 7-11, 2011	Voice Memo App record reading 12-15 minutes.	What did you notice about your reading?
February 14-18, 2011	Voice Memo App record reading with a partner. I read you read in the same book. Record for 12-15 minutes.	What did you notice about reading with a partner? Was your reading fluent?
February 22-25, 2011	Voice Memo App record reading 12-15 minutes	What did you notice about your reading?
February 28-March 4, 2011	Voice Memo App record your own writing 10 minutes.	What did you notice about reading your own writing? Did you find mistakes to correct?
March 14-18, 2011	Voice Memo record your own writing 10 minutes.	After correcting your mistakes from the week before did you notice that your reading was fluent and your story made sense?
March 21-25, 2011	Voice Memo App record reading 12-15 minutes	What did you notice about your reading?
March 28-April 1, 2011	Word Pop	How many words did you make and what was your highest score?
April 11-15, 2011	Voice Memo App record reading 12-15 minutes with a partner. Reading a 2 person reader's theater script.	What did you notice about your reading with a partner? Was it fluent?

April 18-21, 2011	Voice Memo App record reading 12-15 minutes. Record with a group of four students readers theater scripts.	What did you notice about your reading with other students in a group? Was your reading fluent compared to the others in your group?
April 26-29, 2011	Voice Memo App record reading 12-15 minutes	What did you notice about your reading?

Procedure for Control Group

The control group of students will be fifth graders from the 2009-2010 school year. These students will have done the regular curriculum during the school year. They have not had any exposure to iPod touches in any lesson plan format at school.

Measurement

The measurement will be conducted to see if the treatment group has made gains in the areas of testing. The data or measurements that will be used are state mandated tests and additional tests that the Central Minnesota School District uses with their students. The tests include the Northwest Evaluation Association (NWEA) test MAP test, the Minnesota Comprehensive Assessment (MCA II) test and Test of Emerging Academic English (TEAE) test. Then the data will be examined from the students' fourth grade school year and the students' fifth grade school year and measure the growth that had happened in that time period. The research will reflect the research question: Does that use of iPod touches in the classroom enhance reading scores?

The data will look at the 2009-2010 school year (control group) and the 2010-2011 school year (experimental group). In the 2009-2010 school year the iPod touches were not used in the school. In the 2010-2011 school year the iPod touches were used once a week throughout the school year. During the course of the school year the research will entail lesson plans that are integrated that correlate with the Minnesota State Standards for fifth grade. There also will be integration into the Daily 5 Café Framework. This Framework is currently used in the Central Minnesota School District.

In searching for the data I have noticed the EL population is a transient population in Central Minnesota. It is very common for them to move school to school within the district. In the recorded data you will see places that say **not enrolled** or **exempt**.

If the students have a not enrolled status that means that they were not enrolled at the school when the test was given. This could be true for all of the tests that are given in this experiment.

If the students have an exempt for a score that means that they have been in the United States for under a year. The only test that they can be exempt from in this study is the MCAII. They hold an exempt status from the state mandated MCAII for one year. Even if the students are “New to Country”, they still need to participate in the TEAE and NWEA MAP reading tests. This will be discussed further in the section where the tests are explained.

The Test of Emerging Academic English (TEAE). The TEAE test is a Title III Assessment that is required by the Minnesota Department of Education. The Title III section of No Child Left Behind (NCLB) requires that all public school students grades K-12 that are identified as Limited English Proficiency (LEP) in Minnesota need to be assessed annually in English language proficiency. The TEAE is a timed paper and pencil test with multiple sections that is administered in four grade bands. The four grade bands are (3-4, 5-6, 7-8, and 9-12). The reading section contains items that have five answer choices, each of which are correct or incorrect with a yes or no indicator. The writing sections consists of two prompts, one with pictures and one that is written. The reading section consists of a graphic section that is 10 minutes long, a short narrative that is 10 minutes long, a long narrative that is 15 minutes long and an expository section that is 30 minutes long. The writing section consists of a picture prompt writing section that is 25 minutes long and a text prompt writing section that is 25 minutes long. The materials necessary for the TEAE test include: Test Administration Manual (one copy for each Classroom Test monitor), No. 2 pencils with erasers for each student, one reading and writing answer document for each student and classroom test monitor. There are no translation materials for this assessment. The only translation that is permitted is the oral translation of the test directions.

There is a limited testing window to take this test. It is within a 3-week period in March of the academic year. This is a secure test with strict rules as far as the checking out of materials and handing them in. The tests must be kept in a locked or

secured room of the school. This procedure is developed by the administration in the school. The Pearson Access company is the publisher for this test.

The test overseers of this test are licensed EL teachers that have had training on how to give the test. District and school staff that are involved with the administering or handling of the assessment must sign a nondisclosure agreement. This nondisclosure agreement is to be kept on record for 12 months.

The control group will be the fifth graders from the 2009-2010 school year. The scores that will be measured will be their TEAE test score from their fourth grade year and compare it to their fifth grade year. The fourth grade score will be the baseline score and the fifth grade score from the 2009-2010 school year will be the ending score.

The experimental group will be the fifth graders from the 2010-2011 school year. The scores that will be measured will be their TEAE test score from their fourth grade year and compare it to their fifth grade year. The fourth grade score will be the baseline score and the fifth grade score from the 2010-2011 school year will be the ending score. In this experiment I would expect to see more growth with the experimental group as iPod touches were integrated into their reading curriculum for the 2010-2011 school year.

In the data if a student has not enrolled for a score they were not at the school to take the test. It is a possibility that they were enrolled in another school in the same district but do to data privacy I was not able to get the scores. This score was not used in the data analysis because it was incomplete.

Northwest Evaluation Association (NWEA) Test. This test is known as the MAP test.

The NWEA MAP test is another test that will be used in the experiment. One of the components of the NWEA test is the growth assessment package called Measures of Academic Progress (MAP). The MAP test is used to measure growth across grade levels. This is not a test that is specific to grade level. MAP adaptive assessments measure growth over time, independent of grade level. MAP is aligned to state standards and the Common Core, and provide insight into student placement, proficiency, instructional needs as well as the effectiveness of programs. This is a computer based test. The school needs to purchase licenses for each child taking the test. The teachers prep the students for the test and then they are brought to the computer lab to take the standardized based test. At the end of a testing sequence, the student receives an overall score, called RIT that indicates the instructional level appropriate for him or her. The range can be from 148 to 245. Using the RIT range is also helpful for teachers to group students with others in the class with similar strengths or weaknesses.

This is an adaptive test and the test can increase or decrease in difficulty while the student is taking the test. When the students take this adaptive test, the test questions are determined by the student's answer to the previous item. An incorrect answer prompts an easier follow-up question. Correct prompt the test questions to increase in difficulty. The resulting score reveals the student's unique academic level. There are 52 reading questions on the test and it is multiple choice. There is no time

limit to the test. This test is typically given three times a year. The data will reflect only the spring scores in this experiment.

The control group will be the fifth graders from the 2009-2010 school year. The scores that will be measured will be their NWEA reading MAP test score from their fourth grade year and compare it to their fifth grade year. The fourth grade score will be the baseline score and the fifth grade score from the 2009-2010 school year will be the ending score.

The experimental group will be the fifth graders from the 2010-2011 school year. The scores that will be measured will be their NWEA reading MAP test score from their fourth grade year and compare it to their fifth grade year. The fourth grade score will be the baseline score and the fifth grade score from the 2010-2011 school year will be the ending score. In this experiment I would expect to see more growth with the experimental group as iPod touches were integrated into their reading curriculum for the 2010-2011 school year.

In the data if a student has not enrolled for a score they were not at the school to take the test. It is a possibility that they were enrolled in another school in the same district but do to data privacy I was not able to get the scores. This score was not used in the data analysis because it was incomplete.

Minnesota Comprehensive Assessment (MCAII) Reading Test. The purpose of Minnesota assessments is to evaluate Minnesota students' achievement measured against the Minnesota Academic Standards. This is a state mandated test that is required from the Minnesota Department of Education. This is a requirement

from the No Child Left Behind (NCLB) Act that was adopted in the year 2,000. This test requires the measurement of all students in grades 3-8 and high school. This is a secure test with strict rules as far as the checking out of materials and handing them in. The tests must be kept in a locked or secured room of the school. This procedure is developed by the administration in the school. It is a pencil and paper test given by the classroom teacher and every student is required to take it. There are sections of reading in the test that are related to literature and informational text. The literature portion may include but is not limited to fictional stories, dramas with dialogue, poetry, fantasy and realistic fiction. The informational text portion may include historical, scientific and technical texts. The tests are given scores by Lexile Levels. The first number indicated in the score is the grade that the student is in and the other two numbers are presented for the level of competency the student has earned on the test. For example all of the fifth grade test scores start with a 5. They can range from a 500-599. If they score a 550 or above that means that they have met the requirements of the given test and are acknowledged as passing. The fifth grade test will measure all of the standards that are written and are taught during the fifth grade year. There are four sections of the test. Sections one and two are given on one day and sections three and four are given the following day. There are approximately 50 questions on the test. The questions are multiple choice. The students have a booklet to read from and then an answer or bubble sheet to fill in the answer to the multiple choice questions. There is no time limit for the test. Students usually take 2 to 3 hours to complete two sections. The entire test can take 4 to 6 hours.

The control group will be the fifth graders from the 2009-2010 school year. The scores that will be measured will be their MCAII Reading test score from their fourth grade year and compare it to their fifth grade year. The fourth grade score will be the baseline score and the fifth grade score from the 2009-2010 school year will be the ending score.

The experimental group will be the fifth graders from the 2010-2011 school year. The scores that will be measured will be their MCAII Reading test score from their fourth grade year and compare it to their fifth grade year. The fourth grade score will be the baseline score and the fifth grade score from the 2010-2011 school year will be the ending score. In this experiment I would expect to see more growth with the experimental group as iPod touches were integrated into their reading curriculum for the 2010-2011 school year.

In the data if a student has exempt for a score they had come to the United States within the year. The students are exempt from taking the MCAII Reading test for 1 year. If the students were enrolled in another school out of state for over a year they still have to take this test. If the student was enrolled in a school in another state under 1 year they would still be exempt from taking this test in Minnesota. This score was not used in the data analysis because it was incomplete.

Chapter 4: Findings

The purpose of this research was to determine if there was any significant growth on standardized test scores, from EL students from the 2009-2010 school year compared to the EL students in the 2010-2011 school year when using iPod touches in the reading class for 1 hour a week. The t-test was given to analyze the data. This was a matched pair t-test, an intact group design, and non-random sample. The only test scores that were used had both a pre-test and post-test score. The other scores were thrown out of the test. This provided many uneven numbers in all of the categories of the tests. Some of the reasons that test scores were not used were due to transient populations and new to country exempt from testing status. The scores from the NWEA MAP, TEAE, and MCAII reading tests were measured from the fourth grade year to the fifth grade year. The control group is the group that data was taken from in the 2009 year as the pre-test and the data from the 2010 year was the post-test. The experimental group is the group that the data was taken from the 2010 year as the pre-test and the data from the 2011 year was the post-test.

I. T-Tests for Control and Experimental Groups

The t-test was a matched pair test. The test scores were from the same individuals. It was a non-random sample.

II. Control Group

The control group was a group of students that already had test scores in place from the previous academic year. This group of test scores was compared to the experimental group to see if the use of the iPod touches

had any significant influence among the experimental group of test scores.

III. Experimental Group

The experimental group was the group that had one hour a week with the iPod touches. This group focused on reading assignments and used the technology during their reading block. The experimental group consisted of the same students that had both a pre-test and a post-test to measure if there was any significant growth. No significant growth on test scores was found.

IV. T-Tests for Control and Experimental Groups

A t-test was conducted to see if there was a statistical significance whether or not the difference between two group's averages most likely reflects a real difference in the population from which the groups were sampled.

Control Group

This table represent the results of the t-tests that were conducted on the experiment. The table shows the individual tests that were given, N equals the number of students that were in the test. The mean is the difference between the pre and the post test. The standard deviation indicates the variability of scores around their respective mean. A low standard deviation means that most of the numbers are very close to the mean and a high standard deviation means that the numbers are spread out. In the table, t represents the t results. The last column represents the

correlation that is based on 95% confident significance that was chosen for the test.

$P < .05 = 95\%$ confident.

Tests	N	x (mean)	SD	t	Sig. (2-tailed)
NWEA MAP					
Control	23	15.00	7	941.838	0.74
Experiment	19	9.47	11	49	
TEAE					
Control	23	24.61	42.34	.232	.818
Experiment	18	21.33	48.06		
MCA II					
Control	21	4.10	14.85	-1.274	.211
Experiment	15	9.93	11.47		

NWEA MAP Reading Test: The control group. Post-test MAP 5th scores minus Pre-test MAP 4th gives us 23 individual scores. The mean score is 15 for the control group. This is how many points the control group's test scores increased from the fourth to fifth grade year. The standard deviation is the measurement distribution of the test scores. For the pre-test the measurement in the 2009 year showed a distribution of test scores was 164-194. The average pre-test score was 179.0435. For the post test, the distribution was 181-207. The average post-test score was 194.0435.

NWEA MAP Reading Test: Experimental group. Post-test MAP 5th scores minus Pre-test MAP 4th gives us 19 individual scores. The mean score is 9.47. This

is how many points the experimental group increased from the fourth to fifth grade year. The standard deviation is the measurement distribution that was used. To measure this test the measurement in the 2010 year the measurement was approximately from 159-197. The average pre-test score was 178.1579. In the 2011 year measurement was approximately 168-206. The average post-test score was 187.6316.

NWEA MAP test conclusion: An independent samples t-test was conducted to compare the MAP Test. Although the control group had a higher mean ($M=15.00$, $SD=7.94$) than the experimental group; however, the results reveal that this was not a significant difference ($M=9.47$, $SD=11.48$). The MAP Test difference was not significant between the control and experimental groups $t(40)=1.83$, ns.

The control group TEAE test: Post-test TEAE 5th scores minus Pre-test TEAE 4th gives us 23 individual scores. The mean was 24.61. This is how many points the control groups test scores increased from the fourth to fifth grade year. The standard deviation is the measurement distribution that was used. To measure this test the measurement in the 2009 year the measurement was approximately from 150-238. The average pre-test score was 194.4583. In the 2010 year measurement was approximately 178-262. The average post-test score was 220.

The experimental group TEAE test: Post-test TEAE 5th scores minus Pre-test TEAE 4th gives us 18 individual scores. The mean score is 21.33. This is how many points the experimental group increased from the fourth to fifth grade year. The standard deviation is the measurement distribution that was used. To measure this

test the measurement in the 2009 year the measurement was approximately from 147-223. The average pre-test score was 185.7222. In the 2011 year measurement was approximately 148-266. The average post-test score was 207.0556.

TEAE Test conclusion. An independent samples t-test was conducted to compare the TEAE Test. Although the control group had a higher mean ($M=24.60$, $SD=42.34$) than the experimental group; however, the results reveal that this was not a significant difference ($M=21.33$, $SD=48.05$). The TEAE test difference was not significant between the control and experimental groups $t(39)= 23$, ns.

Control group MCAII reading test: Post-test MCAII 5th scores minus Pre-test MCAII 4th gives us 21 individual scores. The mean is 4.10. This is how many points the control groups test scores increased from the fourth to fifth grade year. The standard deviation is the measurement distribution that was used. To measure this test the measurement in the 2009 year the measurement was approximately from 16-48. The average pre-test score was 32.1429. In the 2010 year measurement was approximately 27-45. The average post-test score was 36.2381.

In the MCAII test the first number is dropped in the score because it indicates grade level.

The experimental group MCAII reading test: Post-test MCAII 5th scores minus Pre-test MCAII 4th gives us 15 individual scores. The mean is 9.93. This is how many points the experimental group test scores increased from the fourth to fifth grade year. The standard deviation is the measurement distribution that was used. To measure this test the measurement in the 2010 year the measurement was

approximately from 13-47. The average pre-test score was 30.4667. In the 2011 year measurement was approximately 28-52. The average post-test score was 40.4000. In the MCAII test the first number is dropped in the score because it indicates grade level.

MCAII Test conclusion. An independent samples t-test was conducted to compare the MCAII test. Although the experimental group had a higher mean ($M=9.93$, $SD=11.47$) than the control group; however, the results reveal that this was not a significant difference ($M=4.10$, $SD=14.85$). MCAII difference was not significant between the control and experimental groups $t(34)=-1.27$, ns.

Limitations to the Study

In this study the sample size was insufficient (statistical power decreases). There were a lot of cases/test scores that were lost due to enrollment, exemptions from the test, or language deficiency. Due to the Minnesota structure of placement, the students were not able to have instruction at their individual learning level. In Minnesota the student is placed by age in the grade level of the English speaking peers. Many students failed these tests that they took because they were not educated to the grade level and the abilities of their English speaking peers. They also were not exposed to English to understand what the test is asking of them. This experiment also may have not held relative value to the students because they were only exposed to the technology of using the iPod touches for 1 hour a week. If the students were able to use the iPod touches for more significant periods of time this may have increased test scores. In the previous study in Escondido, California, the

majority of the students were Spanish speaking EL students. The students in Central Minnesota were of mixed East African languages, Asian languages and also Spanish. It may be more difficult to teach a variety of EL students English rather than only Spanish speaking group. It at least is something to consider in the limitation category.

The lessons on the iPod were different than the lessons conducted in Escondido California due to unavailability to applications that were discontinued or recently updated. The test that was conducted in Escondido, California also was over a 6-week period of time whereas in Central Minnesota data was collected through the months of October to April. Overall there were many variations of lessons taught. Due to the fidelity of the curriculum in Central Minnesota, standards and expectations were different and that is possibly why the outcome was different in the California study.

Chapter 5: Conclusion

This research was conducted on EL students who had used iPods to increase test scores. The findings reflected that there was no significance between the control group and the experimental group. The school was in Central Minnesota and there were a variety of EL students who had taken three different tests. The ranges of English skills varied. There were students who were new to the country just learning how to speak English to students who were born in Minnesota and spoke a different language in the home. The NWEA MAP test, the TEAE test and the MCAII tests were used for the measurement.

It was evident that all of the planning of a different way of teaching EL students did not raise test scores. Even though the tests did not reflect growth, exposure to new technology in the classroom was important. If the students had more exposure to the iPod touches the outcome could have changed in the experiment. One hour a week was not enough to see any significant growth. In the school in Escondido, California each student had an iPod touch to use in the classroom for the entire school year (Apple, n.d.). It was not stated in the article how many hours or days of the week the students were using this tool to improve their reading fluency scores. The students in the school in Central Minnesota only used them for 1 hour a week because the iPods were used by multiple teachers and students. This was the starting year to use this particular type of technology in the classroom. This was the first year that the school had invested in teaching with the

iPod touches and teachers were planning lessons to accommodate all learners in their classrooms.

The school in Central Minnesota had limited resources and iPods at the time of the experiment to have the students use the technology for longer periods of time. If this experiment was conducted again in the future, it would be interesting to see with more exposure to the iPods or iPads if the test scores would increase. In the years since 2010 more money has been invested in technology. In some schools in the district there is even an iPad for every student in the class. If the test was given again it would be interesting to see if it made a difference in EL students' standardized test scores. Technology is changing so quickly every day. It is not surprising now to see classrooms equipped with a variety of computers, interactive whiteboards, iPads, iPods, Chrome Books and various computer software in schools to enhance reading test scores. In addition to this, many endless hours are spent to train teachers on current programs and tools to help the children meet the requirements of the state and nation in the demanding world of high stakes testing.

The EL students also came from a variety of backgrounds including no prior schooling, limited English skills in speaking, listening, reading and writing to EL students that are performing just under grade level.

The problem that was stated earlier is still a concern in the school district in Central Minnesota. There is still a very large population of free and reduced lunch students and also a large population of EL students that are not making Adequate Yearly Progress (AYP). When students do not fulfill the requirements at the state and

national level, the school is labeled as a focus school or priority school. The schools then have a variety of changes ahead of them to restructure or change the way things have previously worked including but not limited to principal and teacher reassignment, and curriculum changes. Additional changes can include hiring of individuals to be academic coaches, changes in food programs, mental health training for teachers and co-teaching requirements with mainstream teachers, EL and Special Education. The most drastic of all actually closing the school. When the school has reached this status they are given additional funds to help remedy the underperforming school population. Some of the funds can be used to buy or upgrade technology needs in the school. By using iPod touches in the classroom the lessons changed from being teacher centered and lecture based to student centered. Students were able to interact and be engaged instantly by using the device. In watching the students interact with the iPod touches, I saw them naturally differentiate to their abilities and it motivated them to learn in a new way. By increasing technology in the schools the practice of the teacher lecture based lesson, may be a way of the past. By using new and interesting technology, the students are able to interact with the teacher and peers in the class.

The lessons were co-taught by the EL teacher and the classroom teacher in the push-in model and there was definite purposeful curriculum integration. There were many hours of preparation to ensure the lessons were following the expectation on the Minnesota State Standards. Overall, the test scores did not increase, but it gave a school district in Central Minnesota a chance to pilot a new program with

technology that was engaging to students learning how to develop a technology integrated program in the future. As a teacher, I will take these findings, reflect, and make a plan to monitor and adjust as technology evolves and try again. This experiment was one of the first in the school district. Since the time of the experiment more technology and different ways of teaching are now available for students and teachers.

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Appendix A: Key Terms and Definitions

Key Terms and Definitions

In this study there is a range of technical terms and acronyms. This list may provide additional clarity and explanation to the material that is presented in this thesis.

Adequate Yearly Progress (AYP): Adequate yearly progress (AYP) is required to demonstrate schools are striving toward the goals stated in NCLB.

Applications (apps): This is application software. This is computer software that is programmed to do a specific task. Apps can be downloaded on devices such as computers, iPods, iPads and cell phones.

Daily 5 Cafe: This is the reading framework that is used in the Central MN school. This framework includes three mini lessons in the areas of Language Arts. This is also incorporated into independent reading, writing and word work time. This framework generally covers a 120 minute block of time.

English Learner (EL): An English Learner is a student whose native language is spoken in the home and is now learning English for academic purposes.

English Language Learners (ELL): This acronym was used before the term (EL) and is quoted in past documentation throughout the thesis. Ultimately the exchange between EL and ELL has a very similar meaning.

English as a Second Language (ESL): This acronym was used before the term (ELL) and has a similar meaning. Throughout the years educators have realized that the word second in the acronym may be incorrect because some of the immigrant students may know multiple languages, not just two.

iPod: Designed by Apple Computer, an iPod is a portable device for storing and playing audio files and applications (apps).

Language Assessment Scales (LAS) Links placement test: This is a placement test given to EL students. This test is on a 1-5 scale of proficiency. This test can better place students in reading groups so students are learning at their level.

Limited English Proficiency (LEP): This label is given to students who are learning English and are not producing English as a native speaking peer.

Minnesota Comprehensive Assessment (MCA II): This is the test given to all Minnesota students to measure academic progress that is required by NCLB.

Minnesota Student Oral Language Observation Matrix (MN SOLOM): This test is given to students and is based on teacher judgment of how the student is progressing. The teacher assigns a number to each category on the MNSOLOM test. This test is also mandatory in fulfilling the Title III requirements for assessing language proficiency for the state of Minnesota.

Northwest Evaluation Association (NWEA) Also known as MAP: This is a test that is given to each student in the Central MN school that this study is based on. This test measures growth and also is a tool how to drive curriculum instruction in particular measurable areas of academics.

No Child Left Behind (NCLB): Law adopted on January 8, 2003 with the goal “*To close the achievement gap with accountability, flexibility, and choice so that no child is left behind.*”

Test of Emerging Academic English (TEAE): This test looks at the individual student's progress in the areas of reading and writing. This test is also mandatory in fulfilling the Title III requirements for assessing language proficiency for the state of Minnesota.

Appendix B: Sample Writing Passage

My Trip to Chicago

I wanted to go to Chicago for a long time. I was excited because I got to fly in a plane. I hope I don't get dizzy on the plane because I get motion sickness. I don't want to throw up in a sick bag.

It was time to board the plane and I am looked for my seat. I needed to make sure I looked at the ticket to find my seat number. Yes! I was so happy that I had a window seat.

After I sat down I heard the pilot say... "We are ready for take off." The flight attendant came out to show us where the emergency exit was.

I was feeling sleepy after we took off so I grabbed a pillow and blanket and took a nap.

We arrived in Chicago right on schedule! I am so excited to see my friends.

Appendix C: Alphabet Writing Poem

Colors

Beige= the color of the walls.

Black= the color of Toya's Hair.

Blue= the color of the basket of books.

Gold= the picture of the pencil.

Green= the color of the back wall boarder.

Grey= the color of the floor.

Orange= the color of the basketball.

Pink= the color of Nimo's shirt.

Purple= the color of the imagination poster.

Red= the color Tyler and Weston are wearing.

Silver= the color of my earrings.

White= the color of the iPod drawer.

Yellow= the color of the spelling word list this week.

Appendix D: Sample Statue of Liberty Assignment

Name_____

1. What country gave the U. S. the Statue of Liberty?
2. What did the gift represent?
3. What does the Statue of Liberty look like?
4. What is the Statue of Liberty made of?
5. What date did the statue arrive in the New York Harbor?
6. The Statue of Liberty has the date July 4, 1776 written on her hand. What does that date represent?

Appendix E: Example of Integration with Minnesota State Standards

iPod touch Lesson	Daily 5 Integration	MN State Standard for fifth grade	iPod touch App	Exit Card Required Evaluation by Students
Recording reading and listening to your own reading. Students read books from their book box. Approximately 10-20 minutes. Students listen to their recorded reading following along with the text.	Read to Someone/Listen to Reading.	The student will demonstrate understanding and communicate effectively through listening and speaking.	Voice Memo Microphones/Headphones	What did you notice by listening to your own reading? What strategy are you working on? (Comprehension, fluency or accuracy) What did you like about this activity?
Word up lesson making words from letter combinations. Add prefixes or suffixes to make words longer.	Word Work	The student will decode unfamiliar words using phonetic and structural analysis and will read with fluency and expression.	Word Up	What prefixes and suffixes did you use to create new words? Did you create any unfamiliar words with your word work? What did you like about this activity?
Students choose a category of words and create a piece of writing with the words	Work on Writing	The student will compose various pieces of writing.	Word Power	What kind of a story did you write? How did choosing categories help you create a story? What did

chosen. Example: Airplane, Colors.				you like about this activity?
Read your own writing. Students or teacher will select a piece of writing the students have been working on. Then they will read it into the iPod touch and then listen to it. After they read it they will come up with ways to “fix up” writing.	Work on Writing Read to Someone Listening to Reading Monitor and Fix up	The student will engage in a writing process, with attention to organization, focus, and quality of ideas, audience and a purpose.	Voice Memo Microphones/ Headphones	How did reading and listening to your own writing help you make changes to make your writing better? What did you like about this activity?
Create a mental picture of your own writing. Option 1. Students will read their own writing and listen to it. Then they will think of a mental picture of their writing and draw it and color it on paper.	Read to Someone Listening to Reading Make a Mental Picture	The student will actively engage in the reading process and read, understand, respond to, analyze, interpret, evaluate and appreciate a wide variety of fiction, poetic and nonfiction texts.	Voice Memo Microphones/ Headphones	How did reading and listening to your own writing help you make a mental picture? Did you re-create your mental picture on paper? What did you like about this activity?
Create a mental picture of your own writing. Option	Read to Someone Listening to Reading Make a	The student will actively engage in the reading process and read,	Voice Memo Microphones/ Headphones	How is your mental picture similar or different to your partner’s

<p>2. Students will read their own writing into the iPod and then switch iPods with a partner. They will listen to their partner's writing and make a mental picture and draw it on paper.</p>	<p>Mental Picture</p>	<p>understand, respond to, analyze, interpret, evaluate and appreciate a wide variety of fiction, poetic and nonfiction texts.</p>		<p>drawing? What did you like about this activity?</p>
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Appendix F: Test Data

TEMPORARY.

SELECT IF (Group EQ 1).

T-TEST PAIRS=MAP5th TEAE5th NewMCAI5th WITH MAP4th TEAE4th NewMCAI4th
(PAIRED)

/CRITERIA=CI(.9500)

/MISSING=ANALYSIS.

T-Test

[DataSet1] \\Stcloudstate\Huskynet\DeptFiles\GradStudies\Stats\Current Projects\Klinnert,
Sarah 8-6-12\Klinnert 8-6-12.sav

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	MAP5th	194.0435	23	13.40786	2.79573
	MAP4th	179.0435	23	15.26576	3.18313
Pair 2	TEAE5th	220.0000	24	42.80288	8.73710
	TEAE4th	194.4583	24	44.93278	9.17187
Pair 3	NewMCAI5th	36.2381	21	9.65352	2.10657
	NewMCAI4th	32.1429	21	16.65919	3.63533
Paired Samples Correlations					
		N	Correlation	Sig.	
Pair 1	MAP5th & MAP4th	23	.854	.000	
Pair 2	TEAE5th & TEAE4th	24	.550	.005	
Pair 3	NewMCAI5th & NewMCAI4th	21	.467	.033	
Paired Samples Test					
		Paired Differences			
		Mean	Std. Deviation	Std. Error Mean	
Pair 1	MAP5th - MAP4th	15.00000	7.94298	1.65623	
Pair 2	TEAE5th - TEAE4th	25.54167	41.66531	8.50490	
Pair 3	NewMCAI5th - NewMCAI4th	4.09524	14.84555	3.23957	

Paired Samples Test				
		Paired Differences		t
		95% Confidence Interval of the Difference		
		Lower	Upper	
Pair 1	MAP5th - MAP4th	11.56520	18.43480	9.057
Pair 2	TEAE5th - TEAE4th	7.94795	43.13538	3.003
Pair 3	NewMCAI5th - NewMCAI4th	-2.66238	10.85285	1.264

Paired Samples Test			
		df	Sig. (2-tailed)
Pair 1	MAP5th - MAP4th	22	.000
Pair 2	TEAE5th - TEAE4th	23	.006
Pair 3	NewMCAI5th - NewMCAI4th	20	.221

TEMPORARY.

SELECT IF (Group EQ 2).

T-TEST PAIRS=MAP5th TEAE5th NewMCAI5th WITH MAP4th TEAE4th NewMCAI4th
(PAIRED)

/CRITERIA=CI(.9500)

/MISSING=ANALYSIS.

T-Test

[DataSet1] \\Stcloudstate\Huskynet\DeptFiles\GradStudies\Stats\Current Projects\Klinnert,
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Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	MAP5th	187.6316	19	19.14335	4.39179
	MAP4th	178.1579	19	19.28518	4.42432
Pair 2	TEAE5th	207.0556	18	59.45485	14.01364
	TEAE4th	185.7222	18	38.87356	9.16259
Pair 3	NewMCAI5th	40.4000	15	12.89961	3.33067
	NewMCAI4th	30.4667	15	17.72757	4.57724

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	MAP5th & MAP4th	19	.821	.000
Pair 2	TEAE5th & TEAE4th	18	.592	.010
Pair 3	NewMCAI5th & NewMCAI4th	15	.763	.001

Paired Samples Test				
		Paired Differences		
		Mean	Std. Deviation	Std. Error Mean
Pair 1	MAP5th - MAP4th	9.47368	11.48607	2.63509
Pair 2	TEAE5th - TEAE4th	21.33333	48.05634	11.32699
Pair 3	NewMCAI5th - NewMCAI4th	9.93333	11.47336	2.96241

Paired Samples Test				
		Paired Differences		t
		95% Confidence Interval of the Difference		
		Lower	Upper	
Pair 1	MAP5th - MAP4th	3.93758	15.00979	3.595
Pair 2	TEAE5th - TEAE4th	-2.56452	45.23119	1.883
Pair 3	NewMCAI5th - NewMCAI4th	3.57960	16.28707	3.353

Paired Samples Test			
		df	Sig. (2-tailed)
Pair 1	MAP5th - MAP4th	18	.002
Pair 2	TEAE5th - TEAE4th	17	.077
Pair 3	NewMCAI5th - NewMCAI4th	14	.005

T-TEST GROUPS=Group(1 2)
 /MISSING=ANALYSIS
 /VARIABLES=MAP5th
 /CRITERIA=CI(.95).

T-Test

[DataSet1] \\Stcloudstate\Huskynet\DeptFiles\GradStudies\Stats\Current Projects\Klinnert, Sarah 8-6-12\Klinnert 8-6-12.sav

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
MAP5th	1.00	28	188.1786	19.20273	3.62897
	2.00	25	182.3600	21.02356	4.20471

Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
MAP5th	Equal variances assumed	.176	.676	1.053	51
	Equal variances not assumed			1.048	48.936

Independent Samples Test				
		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
MAP5th	Equal variances assumed	.297	5.81857	5.52530
	Equal variances not assumed	.300	5.81857	5.55419

Independent Samples Test			
		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
MAP5th	Equal variances assumed	-5.27394	16.91108
	Equal variances not assumed	-5.34337	16.98051

T-TEST GROUPS=Group(1 2)
 /MISSING=ANALYSIS
 /VARIABLES=MAP4th
 /CRITERIA=CI(.95).

T-Test

[DataSet1] \\Stcloudstate\Huskynet\DeptFiles\GradStudies\Stats\Current Projects\Klinnert, Sarah 8-6-12\Klinnert 8-6-12.sav

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
MAP4th	1.00	23	179.0435	15.26576	3.18313
	2.00	19	178.1579	19.28518	4.42432

Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
MAP4th	Equal variances assumed	.437	.512	.166	40
	Equal variances not assumed			.162	34.003

Independent Samples Test				
		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
MAP4th	Equal variances assumed	.869	.88558	5.32954
	Equal variances not assumed	.872	.88558	5.45041

Independent Samples Test			
		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
MAP4th	Equal variances assumed	-9.88582	11.65699
	Equal variances not assumed	-10.19094	11.96211

T-TEST GROUPS=Group(1 2)
 /MISSING=ANALYSIS
 /VARIABLES=TEAE5th
 /CRITERIA=CI(.95).

T-Test

[DataSet1] \\Stcloudstate\Huskynet\DeptFiles\GradStudies\Stats\Current Projects\Klinnert, Sarah 8-6-12\Klinnert 8-6-12.sav

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
TEAE5th	1.00	28	212.1429	44.90213	8.48570
	2.00	25	192.1200	56.87583	11.37517

Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
TEAE5th	Equal variances assumed	.004	.948	1.430	51
	Equal variances not assumed			1.411	45.593

Independent Samples Test					
		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	
TEAE5th	Equal variances assumed	.159	20.02286	14.00273	
	Equal variances not assumed	.165	20.02286	14.19160	

Independent Samples Test					
		t-test for Equality of Means			
		95% Confidence Interval of the Difference			
		Lower	Upper		
TEAE5th	Equal variances assumed	-8.08879	48.13450		
	Equal variances not assumed	-8.55023	48.59595		

T-TEST GROUPS=Group(1 2)
 /MISSING=ANALYSIS
 /VARIABLES=TEAE4th
 /CRITERIA=CI(.95).

T-Test

[DataSet1] \\Stcloudstate\Huskynet\DeptFiles\GradStudies\Stats\Current Projects\Klinnert, Sarah 8-6-12\Klinnert 8-6-12.sav

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
TEAE4th	1.00	24	194.4583	44.93278	9.17187
	2.00	18	185.7222	38.87356	9.16259

Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
TEAE4th	Equal variances assumed	1.415	.241	.660	40
	Equal variances not assumed			.674	39.112

Independent Samples Test					
		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	
TEAE4th	Equal variances assumed	.513	8.73611	13.24029	
	Equal variances not assumed	.504	8.73611	12.96442	

Independent Samples Test					
		t-test for Equality of Means			
		95% Confidence Interval of the Difference			
		Lower	Upper		
TEAE4th	Equal variances assumed	-18.02351	35.49573		
	Equal variances not assumed	-17.48450	34.95672		

T-TEST GROUPS=Group(1 2)
 /MISSING=ANALYSIS
 /VARIABLES=NewMCAI15th
 /CRITERIA=CI(.95).

T-Test

[DataSet1] \\Stcloudstate\Huskynet\DeptFiles\GradStudies\Stats\Current Projects\Klinnert,
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Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
NewMCAI15th	1.00	27	34.9630	9.68933	1.86471
	2.00	21	36.3333	14.29102	3.11856
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
NewMCAI15th	Equal variances assumed	.535	.468	-.395	46
	Equal variances not assumed			-.377	33.558
Independent Samples Test					
		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	
NewMCAI15th	Equal variances assumed	.694	-1.37037	3.46546	
	Equal variances not assumed	.708	-1.37037	3.63353	
Independent Samples Test					
		t-test for Equality of Means			
		95% Confidence Interval of the Difference			
		Lower	Upper		
NewMCAI15th	Equal variances assumed	-8.34599	5.60525		
	Equal variances not assumed	-8.75818	6.01744		

T-TEST GROUPS=Group(1 2)
 /MISSING=ANALYSIS
 /VARIABLES=NewMCAII4th
 /CRITERIA=CI(.95).

T-Test

[DataSet1] \\Stcloudstate\Huskynet\DeptFiles\GradStudies\Stats\Current Projects\Klinnert, Sarah 8-6-12\Klinnert 8-6-12.sav

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
NewMCAII4th	1.00	21	32.1429	16.65919	3.63533
	2.00	15	30.4667	17.72757	4.57724
Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
NewMCAII4th	Equal variances assumed	.107	.746	.290	34
	Equal variances not assumed			.287	29.121
Independent Samples Test					
		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	
NewMCAII4th	Equal variances assumed	.774	1.67619	5.78329	
	Equal variances not assumed	.776	1.67619	5.84523	
Independent Samples Test					
		t-test for Equality of Means			
		95% Confidence Interval of the Difference			
		Lower	Upper		
NewMCAII4th	Equal variances assumed	-10.07686	13.42924		
	Equal variances not assumed	-10.27649	13.62887		

Appendix G: Individual Test Scores

Control Group of 5th Grade students in 2009-2010 Non-iPod Users

The 4th Grade score is from the 2008-2009 school year and the 5th grade score is from the 2009-2010 school year. This is a measure of growth from the spring of 2009-2010 in non-iPod users.

Assigned #	Map 5th Grade	Map 4th Grade	TEAE 5th Grade	TEAE 4th Grade	MCAII 5th Grade	MCAII 4th Grade
1A	164	153	177	132	517	Exempt
A2	200	178	206	181	530	426
A3	182	174	196	160	530	432
A4	137	Not enrolled	Not enrolled	Not Enrolled	Exempt	Not enrolled
A5	138	Not enrolled	Not enrolled	Not enrolled	Exempt	Not enrolled
A6	162	Not enrolled	185	Not enrolled	528	Not enrolled
A7	195	177	241	144	544	Exempt
A8	154	Not enrolled	187	Not enrolled	526	Not enrolled
A9	168	152	147	125	517	416
A10	205	202	290	206	545	447
A11	211	189	309	250	544	443
A12	190	170	200	153	530	403
A13	147	Not enrolled	135	Not enrolled	532	Not enrolled
A14	179	172	185	183	530	437
A15	195	No score	222	211	542	442
A16	198	166	198	164	537	403
A17	205	181	220	234	542	441
A18	196	179	153	266	535	440

A19	148	Not enrolled	153	Not enrolled	Exempt	Not enrolled
A20	206	198	290	244	542	444
A21	194	181	214	176	535	411
A22	199	184	217	215	533	442
A23	201	199	267	239	548	440
A24	210	201	252	277	560	455
A25	183	169	210	174	535	426
A26	192	179	220	168	536	Exempt
A27	183	169	210	174	535	426
A28	177	155	154	150	521	423
A29	189	174	220	146	536	403
A30	212	207	259	244	526	455

Experimental Group of 5th Grade students in 2010-2011 iPod Users

The 4th Grade score is from the 2009-2010 school year and the 5th grade score is from the 2010-2011 school year. This is a measure of growth from the spring of 2010-2011 in iPod users.

Assigned #	Map 5th Grade	Map 4th Grade	TEAE 5th Grade	TEAE 4th Grade	MCAII 5th Grade	MCAII 4th Grade
B1	195	180	203	189	544	441
B2	161	Not enrolled	133	Not enrolled	Exempt	Not enrolled
B3	193	172	171	148	526	418
B4	150	125	148	Not enrolled	511	Not enrolled
B5	163	165	154	124	540	Exempt
B6	170	191	210	215	535	440
B7	187	185	188	201	539	424

B8	175	165	190	124	536	408
B9	154	Not enrolled	147	Not enrolled	540	Not enrolled
B10	181	177	183	158	532	Exempt
B11	163	161	153	121	535	408
B12	201	184	208	209	540	428
B13	188	183	208	196	539	432
B14	201	Not enrolled	197	Not enrolled	540	Not enrolled
B15	194	181	188	206	539	424
B16	184	155	166	154	511	Exempt
B17	173	Not enrolled	173	Not enrolled	523	Not enrolled
B18	151	Not enrolled	136	Not enrolled	Exempt	Not enrolled
B19	201	188	239	212	541	443
B20	154	Not enrolled	136	Not enrolled	Exempt	Not enrolled
B21	199	197	231	255	550	441
B22	214	195	221	194	543	445
B23	234	217	425	233	581	478
B24	186	175	186	192	526	430
B25	189	189	203	212	532	424