Determining the Most Effective Way to Use
Podcasting Technology for Elementary Student Learning

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Chapter I: Introduction

Description of the Community

The research for this paper was conducted in a large urban and racially diverse county of 1,220 square miles on the southeastern coast of Florida. The U.S. Census Bureau (2008) reported the county population of 1,787,636 in 2006. The annual unemployment rate of this county is 3.1%. The leading industry of employment is retail and trade with 101,488 jobs, followed by healthcare and social assistance with 84,111 jobs. Of 682,105 households, about 29% have children under the age of eighteen. The local, countywide school board reported the 2007/2008 enrollments as 258,905 students in 283 public and charter schools; 138 of which are elementary schools with 111,419 students in the fifth grade or below.

The community for which the present research project was conducted is centrally located within the county. A large area of the community was originally willed to the county exclusively for educational purposes. This educational complex today includes one private and four public schools which include grades K-12 collectively, and six post-graduate campuses.

Writer's Work Setting

The subject of this research paper is one of the public elementary schools in the educational complex, which includes elementary to post graduate levels. The school has historically been a research and development center. The elementary school of 789 students is unique because it is not assigned to one specific community, but draws students from the entire county. The enrollment policy was designed to create a student population that is relevant to the district-wide community. Student enrollment is controlled and the ethnic ratio of students is kept close to that of the county population. The current student ethnic ratio is 7% Asian or Pacific Islander, 40% Black non-Hispanic, 27% White non-Hispanic, 4% Multiracial, and 22%

Hispanic. The result of students coming from communities all across the county is that almost all travel to and from school by bus, and see very little of their classmates out of school hours. Many schools that have their student population living within a small community find that the majority of their students are of the same economic background. As this school draws students throughout a large county, it creates an economically diverse student body. Teachers cannot assume all students have the same access at home to learning resources like a home computer.

The school curriculum specials classes include art, music, physical education, Spanish, math, and media; with a dedicated teacher for each. Extracurricular activities include an art club, chorus, fitness club, environmental club, Spanish club, chess club, and math club. This school has an exceptionally involved PTA that provides financial grants to teacher programs as well as supporting many programs through parent volunteers. Additional programs in which the school participates include a countywide exercise awareness initiative, Commit to Be Fit; a community outreach program, Souper Bowl of Caring; as well as before and after school childcare.

Writer's Role

The writer has attended several schools from elementary to post graduate levels on this complex campus and has established a professional relationship with the faculty and staff with this school since 1998. The writer has in the past been employed as an assistant to the technology resource specialist at the school, and is presently involved as a volunteer; providing a variety of classroom support. The research for this paper is being conducted with cooperation and support from the school's current principal, technology resource specialist, and a group of teachers involved in a small learning community.

Chapter II: Study of the Problem

Problem Statement

The problem to be solved in this research project is that the most effective way to use podcasting technology to enhance elementary student learning is unknown.

Problem Description

The elementary school is introducing iPod touch devices for delivery of student instruction. An iPod touch (Apple Incorporated, 2008) is a handheld interactive device that allows you to view and listen to digital media and interactive software. Eighty iPod touch devices have been purchased to be used with a pilot group of four classes of grades three to five. The iPod touches come with two docking carts that can be used to synchronize all units with the same podcasts. A Podcast is a digital media program, audio or video, that has been designed to be used on a portable media player (such as an iPod) or on a personal computer. Podcasts are usually distributed over the Internet. The current plan is for the students to take the iPods home with study material and other instruction in the form of podcasts pre-installed by the classroom teacher. The school has a contract with Discovery Education to provide educational digital media for the classroom teachers. Discovery Education (2008) describes their service as providing "engaging digital resources to schools and homes with the goal of making educators more effective, increasing student achievement, and connecting classrooms and families to a world of learning." Teachers in the school are also being trained to create original podcasts, which will meet the requirements of their designed unit of study.

This new program is the brainchild of the principal of this school. Thus far the school administration has not found evidence of any other schools that have experimented with iPods for home delivery of student instruction. Research, experimentation and testing must now be

done. Video media must be compared to other methods of instructional tools. Additionally, it is not known if the iPod is the best way for students to study with digital materials. The most effective delivery system for video instruction for these grade levels needs to be determined. There are two classes in grades three through five participating in the pilot program. There are equal numbers of classes in each grade that are not participating with the iPod touch units. Comparisons between the two groups of classes must be made and evaluated.

Problem Documentation

This iPod program was created for a variety of reasons. 40.7 % of the school population receives free or reduced price lunch. 18% of students at this school are classified as English Language Learners; 10.1% have been diagnosed with a learning disability. The students enter the school from diverse economic and social backgrounds. While all students are expected to reach identical benchmarks, they come to school with diverse learning needs and styles. Some students are not provided with the same resources to meet these needs. Many of their families cannot afford to offer at home what other students take for granted, like a home computer, access to library resources, or even the services of a tutor. The home environment is mostly beyond the teacher's influence. It is important that students be offered an equal opportunity to learn. Teachers must aid in a quality home study environment whenever possible.

Teachers today are competing for their student's interests. A technology-rich curriculum is necessary to keep up with the rest of the distractions that surround the student, especially at home. It is often difficult to maintain clear communication between school and home, for student instruction. When a student is assigned home study, they are often left with questions or misunderstandings that cannot be clarified without reference to that day's lessons.

Relationship of the Problem to the Literature

McCarthy (1997) identifies four ways of learning: thinking, feeling, reflecting, and acting. In an ideal learning environment all four are provided to the learners in balance. Unfortunately, current school trends reward thinking at the expense of students who learn through feeling. As well, reflection is a pervasive teaching approach; students who approach learning through action or by creating their own solutions are not often nurtured. "Learning is both reflective and active, verbal and nonverbal, concrete and abstract, head and heart. The teacher must use many instructional methods that are personally meaningful to each student." The key word here is "many." In order to capture the students' attention and interact with them as they learn, educators must continually diversify their lessons with varied media. Wolk (2007) tells us "on a typical day most Americans 16 years old and older never read a newspaper or a book." Wolk asserts that textbook-based schools have become out of touch with basic life skills such as evaluating real situations, creating original thoughts, and applying reasonable solutions. "Passive schooling creates passive people." A typical 8-18 year old spends more time interacting with media than they spend in school. Wolk tells us that our schools need to become "vibrant workshops for personal, social, and global transformation."

Time magazine named "You" the person of the year for 2007 because "You," that is everyone, is in control of the Information Age. Many teachers probably feel the way Zukowski (2007) does when she says, "I feel that the Information Age controls me most of the time." Ingle (2007) suggests that many of the things that have been criticized as "negative cultural phenomena" are actually making people smarter, pointing out that IQ scores have been consistently increasing. Ingle quotes the Regimen of Competence principle, a well-known guide for producing successful video games. "Make a game too hard, and no one will buy it. Make it

too easy, and no one will buy it. Make a game where the challenges evolve alongside your skills and you'll have a shot at success. And you'll have built a powerful educational tool to boot." Educators have to provide nonstop challenges to meet the changing needs of a diverse population's growth at each individual's level. Technological media has just begun to be tapped in potential ways that it can be used to provide quality educational experiences.

Making the learner personally involved in the podcast presentation may be a powerful tool. A study in tutoring by producing video of students successfully completing a desired task, and then allowing them to watch themselves performing, shows that "video self-modeling improves student outcomes" (Dowrick, Hitchcock & Prater, 2004). In this research students produced videos of themselves fluently reading. Lee, McLoughlin and Chan (2008) conclude that the greatest potential for learning is not reached by watching content on teacher created iPod presentations, but through the process the learners experience as they discover, select, sort, and interpret content while producing their own podcasts.

Causative Analysis

Using iPods to deliver lessons to students for home study will allow those students to review lessons whenever questions arise. When paper-based studies are supplemented by an iPod and headphones, delivering audio and video, the students are placed into a multi-sensory study environment. The student can more easily tune out the countless distractions of their environment, wherever they may study. The student will literally be bringing the teacher's voice home. All students are provided with unlimited access to the podcast lesson without the requirement of extra resources such as a home computer. Podcasts "allow learners to access information at anytime from anywhere, with no constraints, just the free flow of information" (Gatewood 2008). The student is allowed to work at a pace of their own and repeat lessons as

necessary. Higher order thinking can be developed if students are empowered with the tools to participate in, and create their own podcasts. Positive reinforcement can be made relevant and meaningful if the student is able to view themselves performing a task that they have successfully mastered.

"The iPod's entry into the classroom is provoking an odd mix of euphoria and bafflement, as any new technology tends to do. Some faculty members proclaim the iPod's potential while others see it as one more technological trap" (Zukowski, 2007). The problem we have is the question of whether educational use of the iPod is exciting because it is new and sexy, or because it offers diverse teaching tools for concrete gains in learning.

Chapter III: Anticipated Outcomes and Evaluation Instruments

Goals and Expectations

       The goal of this research project is to determine the most effective ways to use podcasting technology to enhance elementary student learning.

       After the iPod program has been established, the learning environment in the third, fourth, and fifth grade classrooms will be multi-sensory and technologically diverse. Student motivation should appear to be increased, and the families of the learners will become more involved in the curriculum. There should be a positive impact on learners by providing content in a format that addresses the multiplicity of learning styles. An iPod with headphones provides audio and video that help block out other distractions, creating an immersive study environment, which will result in more efficient student independent study. Home exposure to podcast lessons will increase the number of students in class who are prepared for class discussion and the application of the lesson. Students will demonstrate the use of higher levels of learning by producing their own podcasts to demonstrate and teach new skills to their peers. As teachers create interactive and dynamic lessons they will contribute to the podcast bank of resources for all teachers, encouraging further collaboration.

Expected Outcomes

       Of the four classrooms with a total of 78 students:

- 100% of the teachers will increase their use of a variety of digital media

- at least 30% of students who chronically do not complete homework will increase their homework completion rate

- at least 25% of the students will demonstrate an increase on daily participation assessments

- at least 15% students will be involved in creating a multi-media presentation that will be used as an instructional tool

- 100% of the teachers will create and add at least 1 podcast to the school podcast bank each quarter of the school calendar

Measurement of Outcomes

Outcomes will be measured through the use of: teacher surveys, classroom daily grade scores, teacher observation and student final performance-based assessments. In addition, current Science Ideas pre and posttest scores will be compared to scores from the last three years.

Chapter IV: Solution Strategy

<u>Discussion of Solutions</u>

The problem to be solved in this research project is that the most effective way to use podcasting technology to enhance elementary student learning is unknown.

The foundation of any solution to this problem is that all teachers will increase their use of a variety of digital media. Video instructional programs before podcasts tended to be remnants of older technology in which the instructor is filmed in a classroom situation, or in an on-site location, lecturing in the same manner as they usually teach. This type of video does not hold the student's attention (Caspi, Gorsky & Privman, 2005). "Because the lives of school-age children are inextricably linked to popular culture and interactive multimedia, technology can be a powerful tool for connecting students' school life with their out-of-school worlds" (Kingsley, 2007). Current technology allows the lesson content to be structured and presented in new and creative ways. In video production, information can be organized for the viewer by format changes and sound changes (Caspi et al.). It is critical for today's students that teachers use a variety of digital media. Readymade, professional quality media can be downloaded to supplement teacher created podcasts from sites like United Streaming by Discover Education (2008). "Discovery Education provides engaging digital resources to schools and homes with the goal of making educators more effective, increasing student achievement, and connecting classrooms and families to a world of learning" (Discovery Education). Internet based lessons allow teachers to provide "diversity of voices, perspectives and experiences" (Kingsley). Podcast lessons can be made by teachers for students to use on iPods and on individual classroom computers. Teachers can present the media lesson with a digital projector for whole class instruction. Internet based lessons can be created and be used to provide more interactive

instruction. Cennamo (1993) discusses the value of interactive learning, stating "The amount of effort, real or perceived, that a learner puts into processing the information makes a difference in the quality and quantity of information gained." It follows that if the student invests more effort, interacting with the information as he gains understanding, the student will retain a high level of learning. Student blogs, social net-working sites and class contributions to a social bookmarking webpage are inexpensive and easy to access ways to personally involve students with curriculum content (Kramer, 2008).

The school's server will be adapted to create a bank for media sharing among the teachers. This will not only make more media available to all teachers, but also encourage collaboration between teachers to create material. In addition to completed lessons the bank will also provide a place to share useful components including video, audio and pictures, to be used in lesson creation. Training courses and individual coaching will be conducted to help teachers learn how to create and implement new media. Kingsley (2007) points out that "although most classroom teachers have had little or no computer technology training in either their coursework or their field experiences they are nonetheless required by the No Child Left Behind Act of 2001 to show evidence of technology use in their classrooms." (Kingsley) To be effective, the teachers at this school will have to understand the difference between study strategies used with text content and with streamed video (Caspi et al., 2005). Text from a book stays still so that you can summarize notes alongside the text. Information is organized in chapters and sections, in a format comfortable to teachers. Pages can be bookmarked and easily found again. In streamed video, the problem of rewinding and forwarding can be uncomfortable for the student. Critical information may be skipped, or the student could simply give up. While many teachers would not make an effort to overcome this obstacle, podcast technology can remove this difficulty if the

content is organized in chapters; knowledgeable teachers can produce a series of small manageable lessons (Caspi et al.). Teachers can be trained in-house by media specialists and by forming peer learning communities. Creating and formatting podcasts used to take precious time and resources to record, edit, test and download. Technology now makes it possible for teachers to produce their own content material with their own computers, and in a manageable amount of time. Apple Education (2008) quotes Crozier, a teacher at Louisa-Muscatine Elementary School: "Now, in minutes anyone with an Apple notebook or desktop computer and GarageBand 3 can add rich digital content to their tests, and make them available to students" (Apple Education, 2008). Training will have to include information about acceptable use policies (AUP's), copyright and fair use policies, online safety and etiquette. Funds will also be needed to allow teachers to attend educational conferences and workshops for developing technological applications (Kingsley). A supportive environment must be encouraged to help train teachers in new instructional tools while not being a burden on their current curriculum and teaching styles.

iPods will be used to send podcast instruction to the students home, for homework. The iPod used with headphones provides audio and video that blocks out other distractions and creates a positive learning environment anywhere. Homework will be supplemented with podcast lessons that the student can view and review again and again as much as is needed. Shea (2000) shows that the flexible pace of video information presentations are extremely effective in improving both grades and motivation with low-achievement students since they can control the pace of receiving the information with their own learning needs. Administrators and staff of Iowa's Louisa-Muscatine Elementary School, observed the same advantage using iPods to deliver testing materials to special needs students. Students who had a staff member read test questions to them seemed reluctant and self-conscious when asking for a question, or parts of the

question to be repeated. When the test material was presented individually, on iPods, the students were free to review questions as needed, moving at their own pace (Apple Education, 2008). Grimes, the school's principal, shares other advantages of iPod test delivery:

- "Special Education students now feel more comfortable and confident in taking tests without adult intervention" (Apple Education).

- "Teachers and paraprofessionals can circulate among students to monitor their progress, aligning learning and test-taking to individual needs" (Apple Education).

- "Use of iPod for testing does not disrupt other students" (Apple Education).

The increased level of independence encouraged the integration of special needs students into the school's mainstream classrooms (Apple Education).

In order to evaluate the effectiveness of the iPods for homework assistance, multiple classes will be given the same homework assignments. Some students will use iPods while the others will be provided other text based instructional materials. This testing must be conducted multiple times, with different kinds of podcasts being used, and with different classes provided with iPod instruction. Kingsley (2007) explains that cognitive psychology is based on the premise that learning is the result of actively processing information. First the learner attends to the information. As the information is organized into different mental representations, the learner integrates the representations into a whole understanding. Mayer (2001) points out that the mind uses different systems for processing visual and verbal information. If a podcast has both the visual and narrative content integrated so that both systems can process the information, you would expect better learning outcomes (Kingsley).

Student podcasts shall be created as final performance assessments. "Technology can provide new and exciting pathways for students to demonstrate their mastery of a topic or

concept. In addition to conducting research, or writing and revising work, students can use digital technology such as interactive multimedia to demonstrate skills and competencies for real-life situations and real-world applications involving critical thinking and complex problem solving" (Kingsley, 2007). Kelly, Leake, Roberts, Skouge & Stodden (2007) place a high value on the use of technology for helping students with developmental disabilities be able to express themselves more effectively. "In line with the adage that a picture is worth a thousand words," many students who cannot demonstrate learning in a text format, are able to successfully communicate their own knowledge in their own voice by creating multimedia presentations. Producing a demonstration of knowledge shows higher levels of learning by students. "It has been found repeatedly that students who use generative or constructive strategies do indeed perform better than students who draw on reproductive strategies or read the text without any other productive activities" (Thornton, Bohlmeyer, Dickson & Kulhavy, 1990). The student created podcasts will be used in the classroom for peer instruction. The media created by students can be saved to the media bank and made available for use by other teachers in further class instruction.

<u>Evaluation of Solutions</u>

Emerging technology is always evolving and improving. The learning tools made available to our teachers must also evolve and improve. Integrating technology into the learning experience will help prepare students for a technologically rich future. Providing these tools to all students can help equalize the different circumstances of an economically and socially diverse community. In developing the integration of these tools into the educational environment, experimentation and evaluation is necessary. Podcasting is a technology full of possibility; but only by putting these tools into the hands of teachers and students could all the possibilities be

realized. With the creation of new media, and the incorporation of powerful technological devices, teachers can send their own lessons home with students, better preparing them for further learning. High levels of learning are fostered when students are given these tools and are allowed to process information, create interpretations, and demonstrate understanding.

<u>Selected Solutions</u>

Solutions for this problem will comprise

- A media bank will be created for teachers to share files

- Teacher training and coaching programs will be conducted

- iPods will be used for home podcast instruction

- Homework comparisons will be conducted between students with and without iPods

- Classroom observations will be conducted after iPod home instruction

- Assessment comparisons will be conducted after instruction with and without podcasts

- Students will create podcasts to demonstrate higher levels of learning

Chapter V: Results

<u>Results</u>

The following outcomes were projected for this research project.

- Of the four classroom teachers participating in Nova's podcasting program, 100% of the teachers will increase their use of a variety of digital media. This outcome was met. Before Nova's podcasting program, some teachers would occasionally display movies, recorded TV content, or Discovery United Streaming content to supplement class instruction. Nova's podcasting program has provided software, cameras, microphones, and web content to teachers. Digital media being used for podcasting now includes teacher and student captured audio, videos and pictures; downloaded content from Discovery United Streaming and other web sources; and software created content from PowerPoint, Keynote, GarageBand, and iMovie. The number of teachers participating in Nova's podcasting program has increased from four in the 2007-2008 school year to eighteen in the 2008-2009 school year.

- At least 30% of students who chronically do not complete homework will increase their homework completion rate. This outcome was met. Survey data shows that nearly 100% of homework assignments involving iPods are returned completed. Homework assignments that do not involve podcasting are between 80% and 85% completed.

- Of the 78 students participating in Nova's podcasting program, at least 25% of the students will demonstrate an increase on daily participation assessments. This outcome was met. Teacher observations report nearly all students display a significant increase in enthusiasm and class participation during lessons that include podcasts. The number of students participating in Nova's podcasting program has increased from 78 in the 2007-

2008 school year to 360 in the 2008-2009 school year.

- At least 15% of students will be involved in creating multi-media presentations that will be used as instructional tools. This outcome was met. Nearly 86%, of the 78 students originally participating in Nova's podcasting program have created multimedia instructional podcasts. All of the classes now participating in Nova's podcasting program involve student podcasting participation.

- Of the four classroom teachers participating in Nova's podcasting program, 100% of the teachers will create and add at least 1 podcast to the school podcast bank each quarter of the school calendar. This outcome was met. The four classroom teachers originally participating in Nova's podcasting program uploaded over 50 podcasts in the 2007-2008 school year. The eighteen teachers now participating in Nova's podcasting program uploaded over 100 podcasts during the first quarter of the 2008-2009 school year.

Discussion

There has been significant improvement in the use of podcasting technology for instructional content delivery at Nova Blanche Forman Elementary since the podcasting program was initiated. Teachers are using powerful new tools to impact student learning. The number of classrooms participating in the program has more than tripled. There are now eighteen participating teachers with a total of 360 students. The teachers have been trained to create small podcasts in a manageable amount of time and are collaborating and sharing their results. The school media bank currently has nearly 300 teacher and student made podcasts. A peer learning community meets weekly to demonstrate skills and share best practices. The teachers use a variety of media to present information in ways that compliment the student's experiences with 21st century communications. Lesson content can be structured and presented in whatever

formats the teacher judges to best meet specific learning goals for a diverse student population.

The effect that the program has had on these teachers has impacted student learning in positive ways. When learning activities include podcast media, students are observed to display a significant increase in enthusiasm and ability to maintain class participation. Increased class work and homework assignments are completed. iPod instruction meets the needs of diverse styles of learners. All students can control the speed and the number of times information is presented to them, without feeling self-conscious if they need additional time. Rather than merely repeating information, the teacher can initiate one-on-one student interactions. Students who are challenged with printed material can use audio media to listen to lessons, as well as to record responses. Students are involved in making the podcasts, actively processing the information to communicate what they have learned with others.

The variety and quality of media readily available connects the learning goals with the student's real world. iPod instruction has provided a quality learning environment at home for students from all cultures and economic classes. As some students experience success with a subject that has been difficult, teachers note that many families become involved in other areas of their student's work as well. The increased use of technology has created a comfort level that spills over to other areas. Every teacher in the school now has a class communication website. Informational meetings about the iPod program have opened a dialog between home and school that is then sustained by the teacher web sites.

Recommendations

Continued documentation is needed to reveal trends in student performance while learning with podcast technology. Further homework comparisons will be conducted between students with and without iPods providing home podcast instruction. Class participation of both

groups will be charted. The Florida Comprehensive Assessment Test is conducted in the fifth grade. As students who have been in the podcast program for more than a year take the test, their scores will help compare student learning with podcasts to traditional instruction. The average score of participating students can be compared to the grade-level average. Comparisons must be observed for several groups of students over several years before a true measure of a trend can be documented.

Comparisons of different podcast presentation methods will be made. Teachers need to have scheduled time to experiment with styles and develop their own podcasts, to access and implement existing podcasts, and to explore ways student created podcasts can enhance learning. Teacher training and peer-coaching programs will continue to be conducted and modified as new needs are identified. New grants will be needed as teachers develop production skills. Additional grants will be needed for more iPod labs, as the program is expanded school wide.

The school's server-based podcast bank has grown rapidly, with hundreds of podcasts. Currently each teacher has a folder of his or her podcasts. The podcast bank needs to be organized to help teachers easily find appropriate media. A database searchable by grade level, subject, content, and format will serve that function.

To implement a podcasting program in another school, emphasis should be placed on establishing a method and habit of communication and documentation. The school should create a standard for school wide assessments for the program, and conduct them early and often. Key decisions about the developing program can be made with more confidence when data is available. Peer collaboration is essential to keep all participants focused on the same goals and to give opportunities to share new skills and expand successful ideas.

To help teachers start a new program, the school should subscribe to Discovery United

Streaming. An agreement to exchange podcasts with another school to build up a podcast library would be valuable. After teachers learn to use prepared podcasts as an instructional tool, they are motivated to create original podcasts that more specifically meet their lesson goals. Scheduled in-house training and development time is very important for teachers to process and apply the new skills in the classroom. A podcasting program needs a long-term commitment from the school. The school should build the program slowly and as individuals share their successes, allow it to expand school wide. Technology evolves at a lightning pace. Although there is no way for a school to keep pace with the newest technology, it needs to be able to change and renew as the opportunities of new technology become available.

<u>Dissemination</u>

Research is meaningless until the results, conclusions and recommendations are shared in a relevant way with all stakeholders. Sharing the results of this research project will provide an opportunity to evaluate the impact and value of the iPod program at Nova Blanche Forman Elementary School. Initially, the results of this research project will be shared with the administration, the technology specialist and the teachers involved in the pilot program. The principal at the school had envisioned the iPod project in the 2006-07 school year; and along with the technology specialist, applied for and obtained a grant for the initial purchase of two iPod labs at the start of the 2007-08 school year. From the start, in house training for participating faculty and information meetings for parents were regularly scheduled. The teachers who initiated iPod instruction in the school will be valuable experts in identifying practical applications of the recommendations and sharing best practices from the real world of the classroom. This process of sharing the results will allow the successful aspects of what has been learned to become the basis of a long-range plan.

At this point, sharing the results with the teachers school wide could be used as a springboard to make the long range plan a reality. New energy is created each time additional participants take ownership in a program and make it work for them. The results of the research and the recommendations for school wide applications will be presented in order to enlist additional classroom teachers. The continuation of learning workshops, along with scheduled cooperative learning communities within grade levels will give the new teachers opportunities to work with the expert teachers.

The research reported in this project will not be complete as the program continues. Ongoing data collection, analysis and reflection will serve several important purposes. Regular evaluations will keep the progression and goals of the program focused for all stakeholders. Sharing the results with parents will involve families and therefore enhance iPod home instruction. Up to date reports with appropriate recommendations will be used to communicate with the grant providers of the iPods, as well as to apply for additional technology grants.

After effective iPod instruction has been established in a substantial number of the classrooms, the program can become a model for other schools. At this point, a district-level presentation would share research results, recommendations and best practices. Teachers from another school could be paired with our expert level teachers to extend peer learning communities beyond Nova Blanche Forman Elementary.

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