



TECHNOLOGY  
RESEARCH  
COMMITTEE

## 2006 – 2007 Grant Project Report

**Project Title:** Student Podcasts in an Earth Science iPodclass

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**School District:** Chenango Valley Central School

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**Technology Research Committee Grant - Summary Report**  
**Student Podcasts in an Earth Science iPodClass**  
**Michael Breed – Chenango Valley High School**  
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**Project Summary**

Without a doubt, this project has had a more substantial and lasting impact upon my students and upon my teaching than any other project I've embarked upon. My students are now well-versed in not only the creation of podcasts, but are now better able to utilize current technology to communicate. I feel that I am a better teacher for it, and I sincerely hope that my students have benefited from this as well. Hopefully, this summary report will explain why I have made such "big" statements about the impact this project has made.

The project began back in August 2006, when I asked my Director of Technology, Janet Gleason, to order the materials for the project from Apple, Inc. At that time, the company was known as Apple Computers, but in January 2007, Steve Jobs, the CEO of Apple, announced at the MacWorld Expo that the company is no longer solely a computer company and would change their name appropriately. What prompted this change? Why, the iPod of course. Apple has sold over 89 million iPods to date, with 48 % of their annual sales of \$7.1 billion being due to the sale of iPods alone. Apple is no longer just a computer company, but a consumer electronics company as well. Steve Jobs is a master at creating the image of coolness in electronics devices, making the iPod the very essence of "cool" in today's society. At this point you're probably wondering what this has to do with my project, but it is that "cool" factor that has helped make this project the success that it is.

When you walk up to a student and say, "Excuse me, could you please take this Mac computer and iPod and create a podcast for your science project?" you invariably see a smile on that student's face. They're thinking, "Wow! I get to use this iPod in school without getting into trouble AND get a grade for it? Sweet!" The fact that the students are excited and interested in the technology makes them more involved in the project and will invariably learn more about the subject in the process.

But I've digressed; let's get back to what has happened. I originally planned to order a G5 iMac computer, 5 iPod Nanos, and microphone adapters for the Nanos. Unfortunately, by the time we could order the equipment, the microphones were no longer available for the Nanos. We had to make a decision about how to modify the equipment to still suit our needs and keep with the spirit of the grant. I decided to look for other options for portable recording and found that a company called XtremeMac made a product called the MicroMemo that connected to a 5G video iPod. The costs offset, so we ordered a single video iPod and a MicroMemo to assist in the recording of podcasts. The compromise has worked out well and the kids like the video iPod even more than they do the iPod Nanos. I also had to modify the iMac request because Apple decided to change chipsets in the iMacs during the summer of 2006. Apple replaced the

IBM-based G5 chip with Intel Core Duo “Merom” chips, so I ordered an iMac equipped with the Intel technology. Fortunately, it was a good choice to make, since nearly all new Mac software is coming out in an Intel chip format.

Once the technology was procured came the next challenge – getting it all to work on our Novell Client based network. That has proven to be a learning experience with a number of challenges, minor setbacks, and whatnot, but it has all been worthwhile. We now have much greater capabilities to integrate Mac computers into our network, unlike most of the schools in the southern tier.

My first challenge was getting to iMac to connect to our server, gain access to my network files, and access the Internet. That was at least partially solved with our district’s purchase of Kanaka. Kanaka is software designed for Mac integration into networks. It seems to be working and we have conquered nearly every bug we’ve been faced with. We’re currently looking at the possibility of purchasing a Mac server in the future to eliminate any connectivity issues we may experience. We are borrowing a Mac server in several weeks to test the possibilities of that hardware. I learned how to utilize Mac OS X’s Finder application to connect to our server and I was also able to utilize free Firefox software to log onto the Internet more easily. The Mac comes with Safari for Internet browsing, but for some reason it doesn’t log onto our network as easily as Firefox does. Once Firefox is connected, Safari works just fine. Again, this might be resolved with the incorporation of a Mac server on our network. I’ve also found that it is at times difficult to get certain programs to install while connected to our network. It was none other than Debbie Stephens from BOCES who suggested that I disconnect to attempt to install the applications that were not “cooperating.” It worked beautifully. When I run into this issue now, I merely shut down, unplug the Ethernet cable, and re-boot. The Mac installs software without issue when I take this relatively simple detour.

Our school also purchased software from Faronics called “Deep-Freeze” that will allow students to use a Mac computer without permanently changing the computer’s settings. It works very well. When a student logs onto a Mac computer running Deep-Freeze, they can work all they want but when the computer is shut down, all changes are erased and the Mac reverts back to its original configuration. Unfortunately, this also means that students cannot save their work. To address this issue, the program allows the administrator to define a “Thawspace,” which allows students to save work into a folder with a defined memory allocation. We have decided to allow the students 10GB of storage, which is more than adequate to allow students to save a number of pictures, podcasts, and other files in a space that will not be erased when the computer shuts down. We are still in the process of addressing some bugs with this and some students have lost some files as a result. Again, once we’re through, we’ll be better able to integrate Macs into our network in the near future.

Another unexpected “perk” associated with this project was the district’s acquisition of a portable cart with 11 MacBook computers, an Airport Extreme wireless router, and a wireless laser printer. The use of this has greatly assisted in the group instruction of the use of GarageBand software for podcast creation and has also proven

beneficial when more than one group of students is working on creating podcasts at the same time and cannot utilize the iMac.

I also had to learn how best to utilize GarageBand in creating podcasts. I had been using Sony's Sound-Forge and Audacity to record podcasts during the 2005/2006 school year and had never used GarageBand. Fortunately, Apple designed the software with users in mind and learning how to use the program effectively took little time. I was able to find several online tutorials and there are even some free video podcasts on the iTunes Store for this.

One of the most important factors involved in making a good podcast is proper planning. Not only should you plan out what you want to say, how you want to say it, and when you will say it, but you should also take some time to make sure your sound quality is good. This means getting to know your equipment, especially your microphone settings. I use a Samson C01U USB condenser microphone, which has excellent sound quality and can connect easily to any computer with a USB port. This eliminates the need for a sound mixer, which can add to the costs of your setup. I did have to take time to figure out where to set the preamp and the microphone volume to get the right sound levels. I also learned that setting your recording on "mono" rather than "stereo" also improves the sound quality with this type of microphone. I use this setup to record my unit review-casts that are now available online and at the iTunes Store.

The review-casts (shorthand for "review podcasts") are entitled "Let's Get Down To Earth... Science" and "CheMatters." Both of these podcasts have been listed on the "New and Notable" header of the Natural Sciences Podcasts site at the iTunes Store. "Let's Get Down To Earth... Science" made it up to #39 on the top 100 science podcasts at one point! To say that this has been a successful endeavor is an understatement to say the least. The podcasts can be subscribed to free of charge at the following URL's: <http://www.cvcasd.stier.org/Podcast/mbreed/Secure/Uploads/lgdtesci.xml> will get you to "Let's Get Down To Earth... Science," and <http://www.cvcasd.stier.org/Podcast/mbreed/Secure/Uploads/chemat.xml> will get you to "CheMatters." Both podcasts are updated with each new unit I teach and have generated a great deal of interest from other teachers in the area and even from employees of Apple itself. This has led to my being asked to present workshops on podcasting on several occasions. I'll discuss more about this in a few moments.

My students' podcasts have not been put onto the iTunes Store at the time of this writing, but as soon as I have a new feed established, they will have their own podcast site dedicated to their work. The feed will probably be established some time in April 2007 and should be found at the following URL: <http://www.cvcasd.stier.org/Podcast/mbreed/Secure/Uploads/cvpods.xml>.

I had already established an RSS (Really Simple Syndication) feed for my podcast known as Mike Breed's Chenango Valley Podcasting Center (<http://www.cvcasd.stier.org/Podcast/mbreed/Secure/Uploads/mbreed.xml>), but I had some trepidation about establishing any new feeds without the direct assistance from our IT

personnel. Those fears were unfounded, for I eventually figured out how to set up a feed on my own. I heard about a piece of software known as “Feeder,” which helps podcasters by writing the XML code for their shows. This was a heaven-sent application, for I had been writing my own code prior to that. Unless you are really computer-savvy, I don’t recommend that route. Feeder takes away much of the hassle in creating your RSS feed and I *would* recommend that. I was able to create the two shows that are now somewhat popular at the iTunes Store with a modicum of effort. Feeder is available for \$29.95 at Reinvented Software at <http://reinventedsoftware.com/feeder/>. My district generously covered the cost of the purchase of the software. I will use Feeder to create the feed for my students’ enhanced podcasts as well.

By October 2007, we had most of the bugs worked out of our system and I was able to begin working with my students on creating podcasts. I began by giving my students a brief tutorial on the use of Mac computers. I utilized the MacBook cart and the iMac computer to demonstrate many of the Mac’s features. One application that proved to be especially popular was the PhotoBooth application. The built-in iSight cameras on MacBooks and iMacs are capable of taking medium-low resolution digital photos. PhotoBooth adds a myriad of special effects to the image. The students absolutely love this and my classroom was filled with the sounds of students having a blast for at least 20 minutes. They were hooked on the Mac platform at that point and I have had several students purchase a Mac computer as a result of that experience. It helps to have the kids like the technology they’re using. I think that this is partly because the allure of the iPod is slowly transferring to Mac computers as well. Apple’s market share is definitely increasing rapidly.

We then spent several class periods learning how to use GarageBand software to record and edit podcasts. I had the kids record a simple, short podcast off the cuff. At first they were shy about recording and listening to their own voices, but this seems to be the case for most people. It didn’t take long for them to get over those fears and get into their work. For some particularly shy students I utilized the XtremeMac MicroMemo on the video iPod to record a narrative or interview for the kids to edit. Janet Gleason observed one class and liked the way the kids were utilizing the Mac technology.

Shortly after that, I assigned groups of students in my enriched Earth science class a lab that they would create an enhanced podcast for. An enhanced podcast is a regular podcast that has the added benefit of pictures as well. The only way to view these, however, is to watch using iTunes software or on an iPod with picture capabilities. Adding pictures to the podcasts adds a certain element that helps explain the lab exercises more clearly and I feel that they are worth sacrificing some accessibility for. The pictures also add to the technological component of the project, giving students valuable experience with digital cameras... a skill they will use for the rest of their lives.

From then to this point, my students have been working on creating their enhanced podcasts during their free periods, down time during class, and during remedial 9<sup>th</sup> periods. We have had some issues with student work being lost, but we have them

resolved at this time. I'm very proud of the work they're putting into the project and with the quality of the podcasts they have created.

### **Workshops and the Impact on Other Teachers**

The first event that I presented at was the STETS Conference in October 2006. The Teacher Center of Broome County and WSKG Public Television support this conference. I made a presentation on the recording and editing of podcasts using Apple's GarageBand software. The two, hour-long presentations I made were well received, with most attendees stating in their evaluations that they felt podcasting was something they would like to incorporate into their own curricula. They were also impressed with the Mac platform and its ease of use. Attendees wished that the presentation were more hands-on, where they could use the software themselves. I agree that this is the best way to present podcasting to a group of teachers. They need to get a real feeling for whether they could put it all together themselves and a hands-on workshop does just that. Overall, I'd say the reviews were quite positive and a number of teachers stated that they planned to give podcasting a try at some point this school year.

I was also asked to teach a seminar on podcasting at the Teacher Center of Broome County in February 2007. I attempted to teach the class in my own classroom using the technology provided by the TRC Grant, but the Center's Director asked that I teach the class at the Center itself. This required me to teach the course using the free software Audacity, which made podcast creation a bit more difficult. I've used Audacity a lot and have written a tutorial on its use with a number of screen-captures included. If you would like a copy, feel free to contact me at [mbreed@cvcsd.stier.org](mailto:mbreed@cvcsd.stier.org). The class went well, but even two hours was a bit of a crunch to get everything in that I would have liked. The participants also indicated in the evaluation that they would have liked more time. Using Audacity is just a longer, tougher process than using GarageBand to record and edit podcasts.

I was also somewhat surprised to learn that I was the featured presenter at one of BOCES Technology Tuesdays in February 2007. Unbeknownst to me, I had been signed up to teach the course. It wasn't a problem though, and I made a presentation about two weeks after the originally scheduled date due to a snow day postponement. I was able to use a MacBook computer to present to a small group of teachers on the use of GarageBand. I was quite surprised at how fast this workshop went, given that the Audacity presentation was so cramped for time. It goes to show just how much easier GarageBand is to use and how much time it saves podcasters. The participants were all very interested in my presentation and several people (including one student) indicated that they plan to start their own podcasts down the road.

I was scheduled to present at the NYSCATE Conference in March 2007, but the conference was cancelled due to a lack of enrollment. I was surprised and disappointed by this unexpected development. Hopefully we can increase registrations in 2008. I am scheduled to present at the Telecom 5 Conference as well, but at the time of this writing it hasn't been held yet.

## **Summary**

Once again, I would like to express my gratitude to the Technology Research Committee for their funding of my project idea. I feel that it has been a wonderful learning opportunity not only for my students, but for myself as well. Moving to the Mac computer has also made me more productive and effective as a teacher. I think we'll be seeing more teachers and schools moving toward this hardware/operating system in the near future. The success of the iPod and the consideration of the consumer that Apple puts forth are making this more and more likely. I would highly recommend that any teacher considering incorporating podcasting into their curriculum do so. Don't think about much, just do it. It's the only way you're going to learn about it. Yes it's time consuming, but it is time well spent indeed.