



TECHNOLOGY
RESEARCH
COMMITTEE

2007 – 2008 Grant Project Report

Project Title: Welcome to the 21st Century! The Paperless Classroom Has Arrived

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School District: Chenango Valley CSD

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Summary Report
“Welcome To The 21st Century! The Paperless Classroom Has Arrived!”
Michael Breed - Chenango Valley HS - 2008

The goal of this project was, and still is at the time of this writing, to attempt to ascertain the degree to which a classroom could go to become “paperless.” It sounds simple enough, but to consider a school classroom without paper would seem to be an oxymoron. Indeed, it has proven to be a difficult endeavor, requiring an intense dedication to the goals stated in this project on both the part of the teacher and the students alike. After working on this project almost daily for the past eight months, I would have to say that going completely paperless in a high school science lab is probably not realistic. That is not to say, however, that immense strides can’t be taken to make a substantial move in that direction. Allow me to explain...

The project began completely according to plan in August 2007, when the necessary equipment (25 iPod Shuffles, a Mac Mini computer, and a keyboard) was purchased by our district. The equipment was inventoried in preparation for the start of the 2007-2008 school year. Once classes commenced, I spent several weeks observing, evaluating, and questioning the students in my classes in an effort to determine which class the project would suit best. Eventually, I selected my enriched Earth Science class to participate in the project based upon my observations and impressions on their work ethic, enthusiasm for the project, and experience with using computers and the Internet.

I felt it was important to instill within the students a sense of responsibility for the iPods they were issued, so I pieced together an iPod Use Agreement that outlines the responsibilities of the students in caring for and using the iPods... and the consequences for their failure to do so. This was signed by both the student and their parent/guardian. Issues in this area have been relatively minor so far. One student had their iPod fail, but being under warranty a replacement was sent to us by Apple Inc. in short order. Several others learned that the dock connector is not a cable to be carried around in their school bags without proper precautions taken. The metal pin that inserts into the iPod Shuffle when docking is easily broken off when placed in a book bag and tossed about. The students involved in these incidents all replaced the dock at a cost of \$30 at the Apple Store or at a local electronics store. Another student was quite upset when he tripped on the stairs at school, landing on his issued iPod and bending it slightly. I was able to straighten the iPod’s frame enough to allow docking and he continued using it, providing a “tough love” lesson in responsibility. Overall, the experience with students using the iPods in school has been positive, but I believe that it is important to evaluate the level of student responsibility in your classes or this could prove to be nightmarish to say the least.

Thus began the project. Once the initial excitement ebbed a bit, one of the first things we had to do was to spend some time learning the basics of using the iPod Shuffle. I was initially concerned about the potential problems with using the same iPod on both a Mac and a Microsoft Windows-based PC, but the iPod can connect to both seamlessly when set for “disk mode,” where part of the iPod flash drive is partitioned for data, in this case 400 megabytes, and the rest of the flash drive is reserved for audio files such as podcasts and music. I was pleased that the students learned this so quickly, with just one or two days of instruction necessary for flat-out mastery of this process by the students. Their experience with technology was downright impressive.

It was also imperative to discuss the proper use of the iPods in an academic setting. I discussed this issue with my vice-principal and we came up with a plan that would accommodate the needs of both my students and the school’s policy against the use of iPods in school. It was decided that students in my class would be allowed to listen to their iPods in my class if I permit it or if they are in study hall. This allows the students to get their work done in an academic setting. Any other use, such as in the cafeteria, in the halls, or in any other classes is prohibited.

In maintaining a “paperless” classroom, we had to work out a method of distributing and collecting class assignments. This was made relatively simple with the Mac Mini computer in the classroom. I would upload assignments to the desktop of the computer and students would download them to their iPods at the beginning of each class. This worked quite well, but grading these assignments did turn out to take longer than assignments collected on paper due to the time required to transfer the files to my desktop iMac computer and grade each one.

Testing and lab reports proved to be the biggest hurdle in going completely “paperless.” I experimented with take-home essay exams, where the test questions were recorded as a private podcast and were distributed to the class on the iPods. The students submitted their answers as a Word or text document that I graded. These took as long as any other essay test would to grade, although placing comments on the papers was trickier. I utilized Apple’s Pages software’s editing comments to place comments on these papers. Some lab reports just can’t be done without writing or doing the work on paper. Labs that involve drawing ellipses, constructing maps, and even constructing graphs are done more simply by hand than by creating them on a computer. It would seem that herein lies one of the limits of going “paperless” in a science class.

The project continues at the time of this writing, and it is my hope that it will continue to enrich the classroom experiences of my students for the remainder of the school year. I feel that the project has offered a novel approach to classwork and has been fairly successful in its stated goals. The limits of going paperless have been examined and experimented with and I feel fairly confident that this approach to learning can be applied to future classes with equal success. In fact, it would probably be implemented with even greater success now that I can better anticipate potential problems and pitfalls that might pop up during the year. I would limit the extent to which

I attempt to incorporate the use of iPods in a laboratory setting, where I have found that a more traditional “hands on” approach seems to work best. I would continue to distribute and collect homework assignments and essays digitally, though. I find this to be an effective way to motivate my students and I find that I have received homework assignments at a higher completion rate. Testing is still tricky, but going “paperless” works fine with take home tests. I did find that recording tests via podcast worked well for resource room students. I experimented a bit with this with the assistance of one of my resource room teachers who shares my desire to try new learning styles. I even tried using the computer’s voice to record the tests, but the current technology still doesn’t communicate as well as the human voice.

I presented my work at the STETS Conference that was hosted by WSKG Studios and the Teacher Center of Broome County in October 2007. Participants took interest in the project and provided a tremendous amount of positive feedback. I am currently scheduled to present my work at the Telecom 5 Conference at BOCES in May 2008, where I will provide further detail about the project and its outcomes. Thus far, I have received very little negative feedback. Most of the negative points of view have come from individuals concerned with the amount of work involved on the teacher’s part in such a project. To be certain, it takes a great deal of dedication and desire to learn about technology and its classroom applications to make this project work. Past experience has demonstrated that teachers with concerns about this probably aren’t the ones well-suited to involving their students with technology to this degree.

Samples of student work and assignments will be provided to Roger Zilliox and the Technology Research Committee on a CD that will be sent via Interoffice mail. Student surveys about the project indicate that the students found the project to be new and interesting. They indicated that I should continue the project with future classes as well. The negative comments centered on the fact that some students didn’t care for typing up short assignments that they felt would be completed more easily by merely writing the answers themselves. I think these comments stem from the fact that students with busy schedules such as those typical of enriched classes tend to be more pressed for time in completing their assignments.

In summary, I can say with certainty that this project has proven worthwhile. I’ve learned a great deal about my own teaching and my approach to science in the process. I plan to repeat the project again next year, albeit a bit wiser about anticipating the pitfalls that may present themselves. I have found that student generated content demonstrates one of the most powerful forms of learning and I plan to incorporate more of that as well. Perhaps down the road funding will present itself to purchase iPods with video screens. The new iPod Touch allows you to actually type on the iPod directly, eliminating the need for a computer connection at home altogether.

I would recommend that other teachers try this as well if they can get the funding for the purchase of the necessary equipment... always a major hurdle in these endeavors. It would be great if we could form a local users group for us to share ideas and generate new plans for future projects.

I wish to extend my heartfelt thanks to the Broome-Tioga BOCES Technology Research Committee, Roger Zilliox, Janet Gleason (my district's Director of Technology), and the Chenango Valley Central School District for all of their support in my efforts with this new, and what I hope has been innovative, idea for teaching students in a manner that immerses them in technology as much as possible.