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Teachers' Perceptions of iPads in the Classroom

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TEACHERS PERCEPTIONS OF IPADS IN THE CLASSROOM

By Michael K. Barbour, MACUL Grant Recipient

In 2009-10, one of my doctoral students (Jason Siko, a science teacher at Clarkston High School) received a MACUL grant that allowed him to purchase several netbooks for his classroom. The purpose of his project was to examine what he was able to do in his science classroom when the number of students per devices was decreased, and also when the students' ability to access the devices was increased. Based on the data collected from his students, he concluded that:

> students found the netbooks useful within the classroom as a convenient way to look up information and complete assignments without having to reserve the school's computer lab. The students also noted that the netbooks actually facilitated the use of other sources of information. In the computer lab, students disregarded sources of information such as the text, but working in a group with only one netbook between them, the students used a wide variety of sources. (Siko, 2011)

Today, iPads and other tablet devices have become the next great device to have a purported impact on classroom teaching.

The 2010-11 MACUL Grant that I was awarded was designed to purchase one iPad and one iPod Touch (along with several accessories for both devices), and supplement that number with a loan of an additional four iPads and accessories from the College of Education at Wayne State University, to develop an iterative professional development for a small group of high school science teachers on using the iPad as a tool for technology integration.

SITUATING THE IPAD AS A TEACHING TOOL

According to a white paper on the effectiveness of interactive whiteboards in the K-12 classroom:

> Interactive whiteboards affect learning in several ways. They serve to raise the level of student engagement in classrooms, motivate students, and promote enthusiasm for learning. In at least one case, the addition of an interactive whiteboard positively affected student attendance. Interactive whiteboards support many different learning styles and have been successfully employed in learning environments serving visually and hearing impaired students. Research also indicates higher levels of student retention, and notes taken on an interactive whiteboard can play a key role in the student review process. In addition to a positive impact on student learning, observations also indicate that designing lessons around interactive whiteboards can help educators streamline their preparation and be more efficient in their ICT (Information and Communication Technology) integration. (SMART Technologies Inc., 2004, p. 4)

However, one of the problems with a teacher's reliance on an interactive whiteboard is that it is a large, stationary piece of equipment; often mounted at the front of the classroom.

The nature of technology in the twenty-first century is that more powerful computing continues to become available on smaller and smaller devices. However, there are several limitations to the usefulness of current mobile devices in the K-12 classroom. One of the most common was the smallness of the devices, particularly the screen size. The iPad is the first device that provides the processing potential (and screen size) of a netbook, but the portability of a PDA or phone. This combination of computing power, size of the visual display, and mobility make the iPad an ideal classroom tool for the integration of technology into the classroom by teachers.

An iPad allows teachers to integrate technology on an individual student basis. As the teacher navigates their classroom and facilitates student learning, the iPad allows the teacher to search for resources or display a simulation or scroll to a specific section of an electronic book or website – without having to return to their desk or to the interactive whiteboard at the front of the room. Essentially, it is as if the teacher is able to tuck that electronic whiteboard underneath their arm and use it with the same mobility as a teacher would use a textbook in years past.

IMPLEMENTING THE PROFESSIONAL DEVELOPMENT

Research on the effectiveness of professional development had shown an increase in teacher learning when teachers take ownership of that professional development (Loucks-Horsley, Love, Stiles, Mundry & Hewson, 2009). As such, the initial professional development session with the teachers was designed to orient them to the device and showcase some initial science-based applications or "apps" that I had pre-loaded on their machines. Following this orientation, the teachers were given approximately four weeks to become familiar with the iPad and then suggest topics that they would like to receive additional training (e.g., both from a list of potential topics I prepared and ones they generated on their own – and most of the topics came from their own suggestions). By having teachers select and prioritize the topics for professional development surrounding the use of the iPad in the classroom

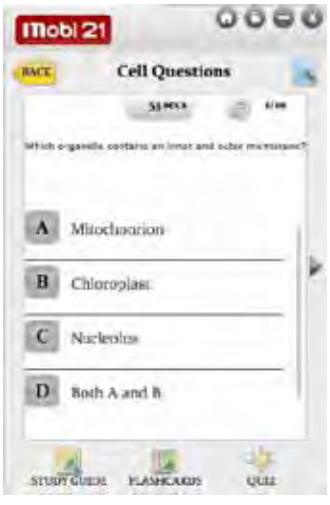
it was hoped that it would increase their level of involvement in the training they received.

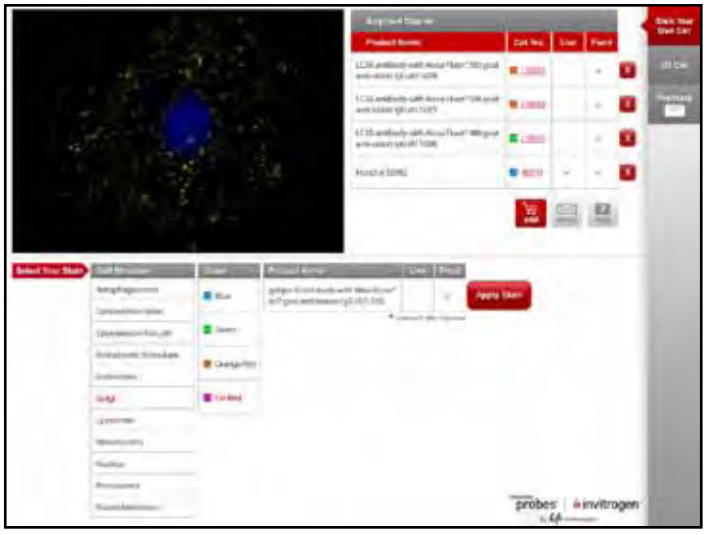
Additionally, research had also shown that there was a higher level of transfer in professional development initiatives when on-going support is provided to the teacher following the initial training – either by their colleagues or an outside support person (Desimone, Porter, Garet, Yoon & Birman, 2002; DuFour, Eaker, & DuFour, 2005; Heck, Banilower, Weiss & Rosenberg, 2008). Significant time was allowed during the professional development sessions for the teachers to showcase ways they had been using the device and different apps they had found, and also to simply interact with each other surrounding their use of the tool. This time, which generally comprises of approximately half of each of the four follow-up sessions that were held, allowed for these teachers to develop a learning community around their support of each other using this new device. Cross (1998) believed that a learning community was intended to foster "active learning over passive learning, cooperation over competition, and community over isolation" (p. 5); and in this instance as these science teachers were always physically present with each other at the school they had many more interactions surround their use of the iPad that could be quantified during the five sessions that I held with them.

EARLY FINDINGS FROM THE DATA

As a part of the project, I audio recorded each of the professional development sessions. I also conducted interviews with each of the teachers who participated, and there was one teacher who implemented a lesson plan that made use of mobile devices that I observed and videotaped. An initial analysis of this data indicated that the teachers all felt that the tool could have powerful uses in the classroom, but all felt extremely limited by the fact that they only had one iPad per teacher (as opposed to one device per student). Interestingly, the teachers used the device more as a personal and professional development tool, than as a resource during their teaching that they could use with their students.

The one teacher who completed a lesson that incorporated mobile devices into his classroom collected devices from a number of his colleagues and also encouraged the students to bring along their own devices and gave them a list of free apps to download beforehand. He began by having students complete a pre-test using the multiple-choice question function in *Mobl21* (a mobile learning management system). He then provided some direct instruction by displaying a 99¢ app on the iPad using the classroom document camera, followed by the students exploring the topic using two different apps from the devices he had borrowed or their own. He finished the class by having the students complete the same multiple-choice quiz as a post-test. While all of the teachers saw the potential of the device (such as how it was used by this specific teacher), in a very pragmatic way they also felt that the expense of these devices was a luxury that schools simply couldn't afford – particularly when you consider that you can purchase two netbooks for the cost of one iPad.





I plan to further analyze this data and submit a follow-up article to the *MACUL Journal* that outlines the full results of the research study conducted as a part of this MACUL Grant.

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