CEHD iPad Initiative

YEAR ONE REPORT
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Mobile Learning — learning within various contexts and locations facilitated by networked and highly portable devices.

**OVERVIEW**

In fall 2010, the College of Education and Human Development (CEHD) launched a mobile learning pilot project to examine how iPads could be used for teaching and learning. Four hundred forty-seven iPads were distributed to the entire incoming first-year class, at no cost to the students. The project was funded by private donation. Participation in the pilot project was voluntary and students were told they could keep their iPad until they leave the college. Twenty-seven of 30 instructors in CEHD’s Department of Postsecondary Teaching and Learning (PsTL) chose to participate by agreeing to incorporate the iPAD into their curriculum. PSTL faculty teach all of the First Year Experience courses for freshmen. An interdisciplinary project team, consisting of staff from CEHD’s Academic Technology Services (ATS) and the Office for Information Technology (OIT) collaborated to distribute iPads to students and faculty, provide student training and faculty professional development, and evaluate the project.

**EMBRACING TECHNOLOGY AND INNOVATION...**

“I was looking for an idea to excite both students and faculty about teaching and learning. One of my goals for the college is to embrace technology and innovation, because each year students are more sophisticated about technology and learning. I wanted us to use one of the newer tools in a way that would interest them and get them excited about learning.” JEAN K. QUAM, DEAN, CEHD

**SUPPORT FOR INSTRUCTORS AND STUDENTS**

Several support mechanisms were developed by the project team.

+ The iPad Faculty Learning Community (iFLC) was formed to facilitate faculty participation and collaboration and to serve as an advisory group. It consisted of nine CEHD instructors (some from PsTL and some from other departments), ATS staff, and consultants from OIT.

+ The iPad Student Learning Community (iSLC) was convened in order to capture the voice of students and to determine what they needed to integrate the iPad more fully into their academic life. It met monthly and was facilitated by a CEHD grad student.

+ A listserv was created for instructors and staff participating in the iPad pilot to share information, ask questions, and collaborate.

+ In the first year, the iPad project team offered 10 different training sessions. Topics included personal productivity, communications, cloud-based applications, student engagement, and e-books.

+ CEHD graduate students created an online repository of a variety of apps specific to PsTL course content areas for instructors.

+ OIT agreed to provide iPad technical support to students through drop-in TechStop locations and the telephone helpdesk.
RESEARCH

The iPad pilot research methodologies included instructor interviews and focus groups, and a student survey and focus group.

INSTRUCTORS

The data from the instructor interviews and focus groups was used to inform ongoing faculty development needs.

Six issues were evident in the faculty interview and focus group responses:

- Pedagogy
- Learning curve
- Faculty support
- Class use when not all students have an iPad
- Comparisons with other technology
- Classroom management

Faculty generally preferred face-to-face trainings and consultation over websites, blogs, and other online resources. Satisfied that the iPad was an asset, the need for establishing clear boundaries for appropriate classroom use was necessary. The general trend is that students are bringing more personal electronic devices (laptops, smart phones, etc.) to class. One instructor shared this comment:

“What I want, in terms of their behaviors, is for [the students] to be active explorers in the classroom, to bring the machines, and to actually utilize them for historical research … One of the things that we did as a first conversation is to describe the level of trust that is going to be involved … and they live up to those expectations. I’ve been really happy so far with what we’re learning. It conveys to them that they’re smart, capable discoverers that we’re co-creating knowledge—historical knowledge.”

STUDENTS

The goal of the student survey and focus groups was to help faculty and administrators understand students’ preferences, perceptions, needs, and problems with respect to their academic uses of the iPad. Specifically, the survey and focus groups investigated the iPad’s:

- Enhancement of the student learning experience
- Value to students, relative to their laptop computers
- Usefulness in several areas of academic life
- Difficulty or ease of use

Over 70%, a total of 241, students completed the survey. Analysis of the survey results indicated that:

- Students who had used the iPad in a greater number of their classes reported much more positive experiences with the device in terms of the learning experience, active participation, and
increased excitement to learn. Experience matters—the greater the number of classes in which a student used the iPad:

The greater the degree to which that student believed the iPad enhanced his or her learning experience
The more collaboratively he or she reported using the device
The more positively he or she rated the iPad in comparison with laptop computers
The more useful he or she found the iPad at performing a range of academic tasks
The more positively he or she rated the overall experience using the iPad in conjunction with his or her classes.

+ Students believed the iPad enhanced their academic experience.
+ Students found the iPad significantly more useful when performing tasks that were shorter in duration (e.g., reading brief notes rather than longer texts) or consumption- rather than production-oriented (e.g., listening to as opposed to recording music).
+ Students felt that iPads and laptops were the same in terms of enjoyability, ease of internet access, and usefulness in class. On portability, the iPad was favored by a wide margin, whereas a laptop was preferred for doing schoolwork outside of class. Laptops were moderately favored for ease of use and display of audio and visual materials.
+ There was widespread agreement about the difficulty of typing on the iPad touchscreen keyboard and the consequent difficulty of using it to produce assignments.

WHAT WE LEARNED

What we learned in the first year of the pilot project has been divided into six themes—The Digital Divide, Sustainable Classroom, Information Literacy, Media Production, Learning Beyond the Classroom, and Personal Productivity.

THE DIGITAL DIVIDE

Decreasing the gap among those students who have personal electronic devices and those who do not

Students’ access to technology is dependent on the resources available to them. Instructors are appropriately hesitant to require students to use technology if some students don’t have access to it. Because all first-year students had an iPad, instructors could integrate it into their first-year course, confident that they were disadvantaging no one. In courses with a mix of first-year and non-first-year or transfer students, instructors found pedagogical solutions to access. For example, instructors used resources/tools accessible from a variety of devices or asked students to work in small groups, where at least one person in the group had a device.

Instructors expressed optimism that the iPad could reduce the digital divide in the classroom. They emphasized finding apps that are free or very inexpensive for students. Working to make app and e-book purchases easy for all students will be another significant step towards reducing the digital divide in the classroom. Here are two comments from instructors that address the digital divide in their classrooms:

“Everyone in class has the assigned materials [on her or his iPad] and they’re reading ahead of time. It’s
nice to have no digital divide during class—everyone is equally able to access the documents.”

“I am most interested in the iPad as a tool in reducing the digital divide. In my learning community we have a significant number of immigrant students or students from low income families. And it’s nice to not feel that some people will have a laptop to bring to class and some people won’t, and that’s a very visible sign of socioeconomic status. I [have a student] who asked me, ‘So when we get to the novels, is it possible - can I get those on my iPad? Even if it’s paying $10 for it, I’d rather read it on the iPad because reading at night is so much easier’… For student learning I think there are access issues that are very much eased by the iPad. I love that.”

MEDIA CREATION

Student-created media

Instructors frequently asked students to create media using their iPad. Through course activities students used their iPads to create:

- Individual photo journals
- E-documents
- Speeches with iPad image projection
- Short movies related to the course theme
- Photomontages of images
- Pictures or videos for class presentation

Guidance was developed for implementing media development projects, such as:

- Digital stories
- Photo essays
- E-publications

PERSONAL PRODUCTIVITY

Enhancing students’ ability to manage calendars, take notes, access email and other learning resources, and communicate with instructors and fellow students

Instructors were overwhelmingly positive about the convenience and ease of accessing email and calendars on the iPad, and many used the iPad to schedule appointments or send email to students “on-the-spot” during class. Students acknowledged taking advantage of these same productivity features of the iPad.

One student had this to say about her iPad:

“I carry it with me to classes and almost everywhere I go because it is a lightweight alternative to a planner, calendar, book, magazine, email reader, digital picture frame, Facebook viewer, Internet viewer… Because I [always] carry it with me, I use a student homework app that lets me see at a glance all that I have to get done and when. I also use the calendar app to track meetings (review sessions, meetings with advisors, and academic clubs) … To begin with, I didn’t think I would use this for anything but fun and games. However, I’ve discovered that I actually do use this for many academic purposes.”
INFORMATION LITERACY

Enhancing students’ ability to locate and critically evaluate information

Instructors and students agree that information access and consumption is one of the primary strengths of the iPad. Many instructors reported encouraging student classroom use of the device to retrieve and report on articles relevant to the course. Here, three instructors share their experiences about the iPad and information literacy in the classroom:

“…the students were reading an article that used a lot of data, and it was written in 1999. I had them working in pairs updating it. A group would find something new, they would go up and we’d use the document camera to project, so that everyone could see what they had found, and they found some really great charts, surveys and statistics. What was exciting about it was that they would find [new data], and then we could go through and critique it [instantly] … It was a really good way to get at … ‘Who prepared this survey? Where does this research come from?’”

“…the other thing that’s been happening in class is that there’ll be a point where somebody asks a question, and then I’ll just say ‘Oh, look it up!’ or ‘let’s find out if we can find the answer to that’ … they’re really fast at finding things, but at the same time, ‘... but is this a credible survey? Is this a credible site?’”

“…it’s about techniques of how to find the information, how do we know that it’s valid or not. And with the machines literally, physically present in the room, we can look at how students did their searches, get into historical research techniques as well as conversations about the content.”

For course work, students used their iPads to:

- Conduct primary research for speeches
- Research current trends
- Survey their speech audiences
- Collect data using Google Forms
- Complete online assessments
- Reference information online
- Access learning management system (Moodle), internet, and library resources for projects

SUSTAINABLE CLASSROOM

Reducing paper and investigating innovative and perhaps non-traditional course materials

It is inconclusive as to whether or not e-texts will replace traditional textbooks. There are several considerations including availability of e-texts, how long the text will be needed by the student, the ability to take notes or highlight, the ability to download the text vs. viewing it online, printing, returning a text, and cost. Course materials are often made available by faculty in PDF format. Students with iPads used applications for reading and annotating PDF documents in many of their classes. The efficacy of using e-texts to their full advantage for the distribution of interactive and multimedia course materials has yet to be tested. This type of digital course material will be explored in the second year of the project. One instructor had this to say about digital course materials:
“Now everyone has the opportunity to have the reading materials with them. [Students] now felt like they have the ability to annotate because, before, students were nervous about marking in textbooks for fear of diminishing the value of those when they sold back the books. Now they’re electronically marking them up and they like that. It gives me the ability to do different learning tasks on the fly during class.”

To reduce the use and related cost of traditional course materials and to take advantage of the features of the iPad, some faculty:

- Replaced traditional expensive hardback textbooks
- Utilized an e-version of required text
- Created a student welcome video
- Used the iPad as a catalyst for in-class research of the day’s headlines related to course topics
- Assigned in-class group internet research assignments
- Used a whiteboard app instead of a traditional whiteboard
- Embedded Power points in notes and use as part of lessons, email notes with the embedded Power points as PDF files to students
- Encouraged students to access and annotate course readings via a reader app
- Checked and sent assignments using their iPads

LEARNING BEYOND THE CLASSROOM

Enabling students to conduct research in the community more easily

Several faculty members developed curriculum that used the iPad to change the learning context. For example, in an Introduction to Psychology course students used the portability of the iPad and the college’s online survey tool to collect data in the community related to their research questions. One instructor said:

“…last year was the first time I tried a survey research project, and I felt like I kind of took the wind out of their sails when I told them that they could only survey people in the class … I informally asked them ‘would it be cool to do their research using an iPad—to go out and collect survey data with their iPad’ and a lot of them thought it would be cool. It was a way to free up the kind of questions that they could ask, so they could, potentially, ask questions of people other than college students.”

MOVING FORWARD

In year two the project team will focus on increasing student use of the iPad for personal productivity and the creation and use of sustainable classroom materials. Working with the observation that iPad use by students for personal productivity increases the likelihood of use for learning activities, the project team will work with student advisers to identify and implement related training opportunities for students. Building on what was learned in year one the project team will work with PsTL faculty to design instruction that builds confidence in the use of technology for learning. Incorporating iPad activities into future capstone projects will give students and faculty the experience needed to make the iPad a tool for learning.
One of the challenges to the Sustainable Classroom goal is the limited use of digital course content by instructors and students. The project team will work with instructors to pursue solutions that increase the use of digital course materials such as interactive e-books and digital textbooks and course packets.

In fall 2011, the project team launched a project website, Mobile Learning at cehd.umn.edu/Mobile. The site showcases project achievements and provides instructors and students with a single point of access to project information, resources, and support. In 2012 the site will be expanded to include regular updates and feature articles about the project with external audiences in addition to being a central resource for instructors and students.

Mobile learning is an organic process—new technologies emerge and the scope of learning objectives change. Much was learned in this project’s first year. Processes and support are now in place to build upon that knowledge as CEHD’s faculty and students embrace technology and get excited about learning.