CHAPTER 10

VARYING PERSPECTIVES: iPad Deployments at the University of San Diego

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Abstract

The University of San Diego has been actively involved in studying the pedagogical benefits of mobile devices in teaching and learning through the deployment of iPads in the classroom since the spring semester of 2012. This paper examines varying perspectives on this project. Academic Technology Services (ATS) created a visionary initiative involving faculty development and logistical deployment strategies to get devices into the hands of the students and faculty members involved. The learning outcomes, lessons learned, and constantly evolving technologies continue to shape this initiative with each deployment. Pain points and success stories are discussed. Detailed processes and procedures, and an in-depth working knowledge of the community needs help the department to research, identify, and support innovative uses of specific apps, and integration into curriculum. Faculty members offer perspectives from their participatory experiences in the program. iPads adopted in a special education methods course in the School of Education and Leadership Sciences incorporated e-textbooks, Blackboard

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Mobile Learn, digital reflective journaling, and collaborative team work. Dr. Jerome Ammer discusses the study outcomes and research questions of those courses. In a communication studies course, Children and Media, Dr. Bradley Bond’s students were required to incorporate the use of iPads into their work tutoring children in afterschool programs. Video blogs replaced the traditional written weekly reflections that were done in the past, requiring students to become comfortable speaking about complex concepts and theories and articulating their thoughts. General outcomes and unanticipated lessons learned from other projects involving a wide array of academic disciplines are highlighted herein.

**Keywords:** iPad, mobile devices, mobile learning, faculty development, teaching and learning
Perspective One: Academic Technology Services (ATS)

Initiative Vision and Deployment—Faculty Development

The Academic Technology Services (ATS) department at the University of San Diego launched its Classroom iPad Pilot Project in the spring semester of 2012, making this fall’s project (2015) the 8th iteration of this special faculty initiative.

With mobile technology becoming more ubiquitous, we felt a strong need to investigate the educational value of these devices and be prepared to support their use. We started out with a broad scope to examine the usefulness of the iPads as a teaching tool in the classroom. We were interested in finding out about the impact of the iPad on students’ learning and in faculty members’ use of the device as a new productivity tool.

Initiative Development

With that goal in mind, we reached out to a number of faculty members who were closely connected with the ATS on multiple projects to partner with us in piloting the iPads in the classroom. Our effort was to get a cross-section of the courses, departments, and projects.

We developed criteria for the project and invited faculty members to submit a brief proposal. In their proposal, faculty could choose from a list of criteria what they were most interested in exploring. Faculty members then were to integrate the device and the apps that helped them with those desired objectives. Whether their intent was to use the device to aggregate course material and use it as ebooks, to develop multimedia materials to offer a richer class project, to document a research or field study on the go, or to use productivity apps to learn a fundamental component of the course but in a new way, we were there to investigate and facilitate the process.

In the meantime, there were a lot of unknowns and ambiguity for us with no data to support the positive impact of this emerging technology in teaching. Does creating a social learning or a more interactive environment lead to learning? Will it indeed reduce printing or will the students end up working more in groups and on collaborative project? Will it help us shape the way we provide faculty development opportunities and support? Can we create a forum where faculty members will learn from each other? These and more were questions that could only be answered by launching and implementing the project.
We did the background work, investigated what other universities were doing along similar lines and came up with a unique plan of our own. Everyone did not see this as project in direct alignment with our strategic direction; but we were able to get the support of the Provost and get the ball rolling. First, we needed to get iPads! Funding was secured to purchase 50-100 devices at first, and we immediately wanted to get those into the hands of faculty members and students so they could begin experiencing learning in a different way. ATS personnel as well as the faculty members all needed be up to speed on using the devices, and to be familiar with some of the apps that would be used commonly. To get the word out to the community, we called on some faculty members who tend to be early technology adopters and who partner with us on application pilot programs and the like, and put the iPads in their hands. They began to explore the possibilities of use in their own individual curriculum. Early discussions with these individuals made it clear that we must not only provide iPads to the faculty members, but also to the students in their classes, and so the decision was made. The development of the initiative included iPads in the hands of the faculty member and students in selected classes across various disciplines for an entire semester.

Faculty members who wished to participate in the initiative were asked to formulate their brief yet strong proposals. A strong proposal identified a specific and clear outcome using a set number of apps to deliver a particular project, or an assignment already with specified deliverables. A proposal that included a control group to compare the findings would be considered a strong proposal.

**Deployment and Logistics**

We had a limited number of devices and many who wanted to take part. We created guidelines and a web site listing the criteria necessary in order to be considered. Ebooks, placebo/control group classes, fieldwork uses, and identification of apps that created new learning opportunities not possible before were all identified as strong inclusions for a proposal submission. We wanted to see how traditional assignments, assessments, and requirements were being replaced with new techniques. In subsequent semesters, faculty members, who have invested in the process to redesign their curriculum for a first semester project, are given preference for a second semester. We in turn invested in their success and monitored the longevity of the process, our interest in everything from the conceptualization and course design to the actual learning outcomes.
So many logistical questions were raised—How do we purchase the apps and image the devices? How do we decide upon a standard image? How do we deal with a consumer product in an enterprise setting? How do we manage the individual user Apple IDs when we do not have the option of an institutional ID? Individual Apple IDs and accounts made it difficult to impossible to deploy the apps that each faculty was requesting. How do we deploy the devices? How do we collect them? What apps does that image include? How do we image a large quantity? How do we inventory them, and track them? How do we communicate with the participants if need be? What about updates to apps? Individuals had to bring the devices to central IT to get the updates installed until the recent purchase of the Casper JAMF MDM solution, which streamlined this process significantly. How do we deal with the theft, loss, or damage of these pricy tools?

Needless to say, we also had several issues behind the scenes—wireless network and classroom connectivity, distribution process and procedures, collections policies, and loss and damage control just to name a few. Every semester is a continuous process of revision of our current workflow. The first semester, we were on the Apple Volume Purchasing Program (AVPP), which included a visit to the Apple Store to purchase the apps. The resulting receipt was a mile long. With the introduction of a new and improved iPad, we had to rethink our inventory so that we did not end up with a mix of old and new, and so that all of the students would have the same technology in their hands. How do we proceed to upgrade when we already have inventory? We talked with Apple and quickly put our devices into a lease program so that we do not end up with obsolete technology on the shelves or a mix of technology out in our community.

**Reflection**

With only a few short years behind us, we have come a long way in simplifying the logistical process of the iPad deployment at the university.

Now in its eighth semester, we have close to 200 devices that are distributed to students each semester. The program has been very well received and to date 42 faculty and 1005 students have participated. We now have several carts of iPads in our Language Commons, in the Copley Library, and in the School of Education and Leadership Sciences (SOLES), and all faculty in SOLES now also have iPads. The iPads are managed by our department and we purchase those used by various departments and schools. All of our technical staff and facilities management each carry an iPad to manage their daily routines. Our
Instructional Design and Training Team (iTeam) has been closely associated with the project from its inception and now fills the role of investigating apps for various disciplines, demonstrating how those apps can be effective in a classroom setting, and making recommendations for syllabus construction to include mobile components in assessment. The iTeam also hosts the Summer Innovation Institute (SII), which serves as a means to further educate our faculty and empower them to be better prepared for the iPad initiative.

Constant engagement with the faculty members was critical in order to identify pinch points, pitfalls, and opportunities for improvement. This was a great way to build our community of faculty partners as well. We implemented a required monthly Brown Bag Lunch meeting where all participants attend in order to share and provide an update. Faculty members demonstrate various apps and techniques that they have found useful, and they are also required to contribute to a blog. In addition to the monthly meetings, we host the iPad Classroom Project Final Presentations and invite other interested USD community members to attend. Each faculty member presents his/her findings along with one or two students from their class who speak about the value this experience provided to their education.

**Findings**

Our findings were many—faculty members and students needed much more help than we anticipated originally. How to use the device, what app to use, how to integrate apps into curriculum for specific goals/learning outcomes—all became evident and we focused on becoming a knowledgeable resource to contribute to the success of the project. It also became clear that students don’t really have the depth of knowledge with productivity applications. Students are well versed in use of the social media or Netflix, but they didn’t view the iPad as a learning tool nor did they have the proficiency needed to use it as such. We needed to expand the breadth of usage and introduce training opportunities. The key was to become proficient with the relevant applications and how to tie them with the learning goals, be willing to explore, capture or instigate new learning opportunities, and allow students to create and develop new material and pursue endless opportunities.

Another challenge was that faculty members needed time to learn the tools and feel comfortable using the device and the apps in their instruction. We expanded the iPad Classroom Project to include an exploration phase prior to the classroom proposal submission. Faculty are
invited (and encouraged) to attend the monthly Brown Bag Meetings and supported throughout their discovery phase and as they incorporate new apps into their curriculum. Simultaneously, the support team needed to develop expertise on advising and exploring boundless ways to transform content and projects that could be presented in an innovative way. How do you get your students in a marketing class to use this device to expand their learning beyond the classroom? What apps to use while engaged in their study abroad program, how to curate their learning and present their projects in a creative way? We guided them through the thought process and provided them with strategies for redesigning.

Of course, there were also many unanticipated lessons learned and we were eager to see those surface. Students were surveyed twice during the semester-long study, once at the beginning of the semester, and once at the end. In the first semester we learned that students were using the device not only for the class for which it was assigned, but also for their other classes, and often their biggest take away was something entirely different from what the instructor had planned. In one class, the faculty member shared with us that he felt that the biggest benefit was to have all of the students on an equitable technology playing field, with none of them at a disadvantage due to outdated or obsolete equipment.

Projects were emerging from these courses that students otherwise would not have had the opportunity to develop or create. They were using iMovie to interview elderly people about communication and how it was when they were young, or to interview and dialog with speakers of foreign languages and provide evidence to their instructor on video. Dropbox for sharing documents became widely used, as was Blackboard Mobile Learn for checking grades, new course materials, and assignments. Creative writing classes that used to require students to print out multiple readings for each class meeting, now required them only to bring their iPads, making learning more sustainable. Ebooks used in lieu of printed text materials were adopted and annotated using apps like iAnnotate, and Notability.

In short, the iPad Classroom Project has been a transformational opportunity for all of us at USD. We have seen the metamorphosis of courses from Marine Science, to English, to French language, to Biology, to Creative Writing, to Communication Studies, Theatre, Nursing, Marketing, and even Band!
Faculty Perspective: Dr. Bradley Bond. The iPad Project in COMM 482: Children & Media

The Department of Communication Studies at the University of San Diego offers a course titled “Children & Media” that is designed as an upper-division course investigating the relevant research on the role of electronic media in the lives of children. The course examines child maturation from a developmental psychology perspective, and a range of issues facing the modern child including advertising, educational media, identity development, violence, health, and new technologies. In the fall of 2013, I wanted to make two changes: weave community service into the curriculum and engage students with technology in novel, interesting ways. I was not only able to successfully meet my goals, but I was able to mesh the two goals into one by participating in the iPad project through the university’s Information Technology Services.

Students in my sections of COMM 482: Children & Media are required to volunteer at an afterschool program throughout the semester. Students tutor children at the afterschool programs and bring those experiences back into the classroom. The only ongoing assignment in the course is a video blog that students produce each week where they discuss how their experiences in the afterschool programs match up with course content or other real-world applications that I ask them to consider. I feel that the video blog has incredible pedagogical utility. Students are used to completing weekly reflections, as this is required in many of their courses. However, students are only comfortable doing so in written form. Requiring students to talk about their experiences and to relate their experiences in the afterschool programs to theories, concepts, and study findings in an oral assignment is difficult for them. Talking about complex concepts and theories challenges students. No longer can they simply edit the way they are experienced in editing. Now, they are required to consider how they sound, the language they use, and the way they frame their verbal arguments. I believe that such an oral defense of an idea is key to success after college, but is not something that many students have experience with outside of a public speaking course. When the course was part of the iPad project, students were able to use their iPads to help them create their weekly video blogs. For example, one course discussion is heavily focused on advertising food to children. The research literature suggests that foods advertised to children are low in nutritional value and high in sugar, sodium, and fat. The video blog for that week required students to ask the children at the afterschool program which breakfast cereals they liked. Students then were to video record themselves
exploring the breakfast cereal aisle at a local grocery store. They were to analyze the characters used on the boxes and compare the nutritional value of the cereals using animated characters to those that did not. In another video blog, students were required to interview a parent of a child and edit the interview into a 5-minute clip that explains how screens are used in that particular household. The video blogs allowed me to keep students working on course content throughout the week, but in a novel way.

The iPads also allowed the students to expand their final project. The final project in the class is to create a media literacy workshop to put on at the afterschool program. Previously, students had not included audiovisual material in the workshops. The iPads, however, afforded students a new channel from which to deliver example media messages to kids in the afterschool program. During the workshops, students use the iPads to show commercials during the lesson when they discussed the persuasive intent of advertising and to show clips of violent content when they were explaining the difference between fantasy and reality in the workshop. In sum, the iPads allowed my students to engage with course content outside of the classroom in a more efficient, exciting manner.

**Faculty Perspective: Dr. Jerome Ammer. Flipping and Tripping Results—Student and Instructor Implementation of iPad in Courses with a Field-Based Component**

This section of the paper is an analysis of faculty and student applied use of iPads in a graduate/undergraduate university special education credential and degree program. Two courses that were required to be taken in the same semester provided the setting for the study. The courses were chosen because each set of courses met three hours a week for 15 weeks with a 150-hour field-component associated with course assignments. The courses were *EDSP 370/570 Assessment Identification to Transition in Special Education* and *EDSP 375P/575P Evidence Based Inclusive Practices in Mild/Moderate*.

**The iPad Studies**

The first study conducted in Fall 2012 focused on a special education assessment course (EDSP 370/570) while using a special education methods course (EDSP 375P/575P) as the control group. There were five undergraduate and 11 graduate students in the study. The second study
focused on the special education methods course (EDSP 375P/576P) and used the assessment course (EDSP 370/570) as the control group. There were three undergraduate and 10 graduate students in the second study completed in Spring 2014. Due to a department change in course sequencing the lapse between the two studies was four semesters. In each case a faculty research iPad grant from the university academic technology services provided each student with an iPad checked out for the full semester. For the first study the instructor was in the second year of using an iPad provided to all faculty in the school of education. A student technology assistant (STA) provided technology support for the instructor during the first study. During the second study the academic technology services provided the instructor with the same first generation iPad Air distributed to students. In both studies the academic technology services provided small allocation of funds to purchase apps specific to the course where the study took place.

Academic technology services selected a faculty member from each of the colleges and schools to receive an iPad grant. Each term the selected faculty collaborated with the academic technology services to develop a pretest and a post test for student participants. The instructor for this study added a midterm survey specific to the special education courses. In addition to the formal surveys the instructor took weekly samplings of student use of iPad in both the experimental and control courses. As part of the study students were asked to keep a running journal of their experience throughout the semester. In both studies students were required to use the iPad in development of their culminating assignment. Students could also earn up to five bonus points by demonstrating apps they found useful in relationship to coursework and field practice. Academic technology services encouraged faculty and students to use the iPads for personal use throughout the semester. Students were encouraged to include personal use apps in their classroom sharing.

Monthly brown-bag sessions provided the recipients of the iPad grants with an opportunity to share successes and troubleshoot solutions to problems that occurred during the semester. These sessions became an important part in the professional development and confidence-building for each grant recipient. A culminating share-out of the accomplishments and stumbling blocks was held to showcase each iPad study. A key component to the culminating experience was the direct involvement of student participants in the formal presentations.

In each study an e-textbook was chosen to accompany course content integrated into a Blackboard learning management shell. Both resources were accessible through an iPad app. The instructor had taught both
courses several times prior to the studies. The subject matter and assignments were compatible with the course delivery in semesters without the iPad integration.

**Learning Outcomes.** The outcome goals written into each iPad proposal were the primary criteria for analysis of both the student and the instructor study outcomes. The departments in the School of Leadership Studies and Education Sciences have incorporated action research methodology across the graduate programs of study. The use of reflective journaling by preservice teacher candidates via multidimensional media is a challenge put forth by the editors of a prominent digital learning journal (Schmidt-Crawford, Thompson, & Lindstrom, 2014). Similarly, students in this study were encouraged to apply the self-reflective critical inquiry techniques learned in action research as a way to use their metacognitive skills to think about the iPad experiences (Bruce & Pine, 2010).

Learning outcomes for both studies incorporated the five teacher standards adopted by the *International Society for Technology in Education* (ISTE).

1. Facilitate and inspire student learning and creativity
2. Design and develop digital age learning experiences and assessments
3. Model digital age work and learning
4. Promote and model digital citizenship and responsibility
5. Engage in professional growth and leadership (International Society for Technology in Education)

**Instructional Research Questions.** The instructor identified the same five research questions for each study. This allowed for a within study and between study analysis of performance outcomes.

1. To what degree and how would students integrate iPad applications into their supervised practicum sites?
2. Would students in the iPad Project self-elect to use their iPad in another, non-project-related, course taught by the instructor?
3. Would the required video by the iPad project students be noticeably different from the required videos submitted by previous year students in EDSP 375P/575P and EDSP 375P/575P?
4. Would a measurable difference in the assignment products produced by students in the Fall of 2012 and the Spring 2014 iPad Project emerge when evaluated using the Assignment Rubrics in TaskStream.com?
5. Would a noticeable difference in collaboration and team effort be measurable in the 1 ½ hour presentation and submitted
assignment project by the teams of three students in the spring 2012 and Spring 2013 EDSP 375P/575P and the Spring 2014 iPad Project team as measured by the Assignment Rubric evaluated in the TaskStream.com learning management system?

**Use Guidelines.** The iPads were distributed during the first class session. Following the iPad checkout process, students were introduced to the overarching iPad Project expectations.

- Use the iPad for personal use outside of the course.
- Explore both education and personal use of apps for their iPad.
- Prepare to present two new apps they found useful at the beginning of each class session.
- Keep a journal of their iPad and application usage in their practicum site, in the course sessions, when completing assignments using the iPad, and for social and personal uses. Students were to use their app of choice to complete the journal, but it had to be in a format that a final version of the journal could be included in the Blackboard submissions for grading. The first entry was to be “my first day of using my iPad…”
- Bring the iPad to every class session.
- Meet with team of three during the last 15 minutes of each class to develop plan to complete group assignments and assist each other when a team member has a problem or question about the iPad and application use.
- The syllabus with course assignments were presented and highlights of how they were to integrate the iPad into these assignments were discussed.

**Study Outcomes.** The assignments and in-class use of the iPad were similar between the two studies. The differences between the two groups of students were more in the detail and creative use of technology when producing their final products. This difference seems to be influenced by the group familiarity with technology and tablets and the advances in the iPad technology and available apps. In addition, the access to iPads and familiarity of integrating technology into classes was noticeably different between the 2012 and 2014 studies. A student technology assistant (STA) was integrated into the first study to provide assistance and potential application of apps for both the instructor and students. The STA’s class schedule and commitments meant that direct support was only available to the instructor. The STA was most accommodating and willing to answer student questions and troubleshoot whenever individual students or groups of students needed further assistance.
The use of e-textbooks in both studies did nothing to enhance the access to multimedia resources that might enhance the learning experience. While e-texts with rich multimedia resources have been used before, the texts in these studies contained no resources that were not already in the paper text. Unexpectedly students in the first study had minimal knowledge or experience using iPads or integrating technology into their own learning or for planning field activities. As a result, 15 to 20 minutes at the beginning of each class needed to be provided to address using the iPads. Students in the second study were iPad and application usage savvy. Although a 15-minute block of time was planned for each class session in the second study, there were no concerns or difficulties with using the device and applications. At the end of the first study, 9 of the 16 participants wanted to buy the devices used in the study. In the Spring 2013 semester, 4 of the 16 students actually purchased their own iPads. In the second study, all 13 students were interested in purchasing their study iPads. While only 3 of the 13 students purchased an iPad by the Fall 2014 semester. The second group had two reasons for not purchasing an iPad. First their college expenses limited their disposable income to purchase iPads. Secondly all 13 of the students regularly used their mobile devices during the follow-up semester. The instructor took a weekly count of the number of iPads students brought to the control course classes. In the first study, 14 of the students showed up with their iPads in the control course. By the fourth class, only 3 students consistently used their iPads in the control course. In the second study, 8 of the 13 students brought their iPads to the control class on a regular basis. Students in the second study consistently brought their own notebooks and mobile devices to both classes and regularly were seen using the devices to take notes and work in team activities.

The apps and journaling in the first study centered around problems and the use of apps that helped them manage their own day. In contrast students in the second study identified a wealth of apps that were useful as either instructional or learning tools for their field placements. The second study students wrote longer reflective commentaries in their journals. Students in the first study averaged four entries the whole semester. Students in the second study averaged better than two entries every week. Participants in the second study provided blog entries that showcased their emerging understanding of self-reflective critical inquiry and how their iPad experiences expanded their skills as future teachers. Journal entries written by students in the second study highlighted what education researchers in Australia referred to as *a new sense of learning spaces and learning networks* (Pegrum, Howitt, & Striepe, 2013, p. 472).
engagement and the richness of insights and contributions by students in the second study during class discussion permeated with this sense of confidence already shared in their learning networks. This was an example of the principles of a flipped classroom in real time.

One difficulty comparing the two groups is the difference in daily use of technology between each group and the number of apps specific to their field placement student needs. As technology is integrated more into our daily lives both instructors and students have a richer palette from which to create new daily uses for mobile devices. A second difference occurs because of social networking. Each study divided students into 3 teams to complete course assignments. But the second study students were in constant contact via multiple channels while the first study students appeared to depend upon in class meeting time and weekend meetings to work on group assignments. Additionally, field-based teachers who worked with the university students were much more computer literate and their placement sites provided a wealth of technology devices including individual K-12 student iPads. Both groups of students reported excitement using the iPads both in class and during field experiences. But as the potential for mobile devices continues to grow exponentially beyond are present experiences, faculty and students need to accelerate their own technology learning curve.
References


