

Intentional Planning to Provide Technology to Students

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Last year, the education department of a small private college in Maine provided the incoming class of elementary and special education preservice teachers with wireless portable devices. It was well established that skill with mobile technology is an important proficiency for teachers to develop. To address this need, the education faculty had reserved the college's limited supply of iPads for selected courses. In addition, since some students came with their own tablets and most had cell phones, the faculty also tried as much as possible to incorporate these devices into coursework. However, they finally reached the conclusion that a program-wide plan was needed for consistent, purposeful technology integration. The goal was to develop in the preservice teachers the attitudes and skill sets they would need to comfortably use any new technology in their future classrooms.

The consensus was to work with the Apple computer company, which was already working extensively in Maine public schools, and to provide iPads to each incoming class that they would then use throughout their four years in the education program. The iPad was selected because it is commonly found in public schools; it is lightweight and portable; and its touch-screen control and abundance of educational applications are a natural fit in K-8 instruction. The specific device may not always be the iPad due to ever changing and advancing technology (Muilenburg & Berge, 2015), but the purpose of the initiative was to develop confidence and creativity in preservice teachers so that they could apply their skills to whatever technology they encounter in their future classrooms. This paper describes the first year of the iPad initiative. It is hoped that this description may be helpful to other small faculties of education with limited resources who aspire to set a similar technology initiative in motion.

A brief review of the literature follows. Initiatives such as this one are essential since it is quite common for K-8 schools to adopt devices such as iPads too quickly without adequate teacher training on how to use them effectively (Daccord & Reich, 2015; Muilenburg & Berge, 2015). The research regarding preservice teachers' skills

with mobile technology has been increasing rapidly since 2010 when iPads first appeared on the market (Baran, 2014).

Many studies explore students' use of iPads within their higher education classes with generally positive results from the students and increasing acceptance by instructors (Baran, 2014; Geist, 2011; Girlando & Eduljee, 2016; Hashim, 2014; Rawlins & Kehrwald, 2014). Those with expertise in technology provide educators with sophisticated visions of how to best incorporate mobile devices into educational practice (Muilenburg & Berge, 2015). Technology integration can be viewed in terms of levels, from teacher-centered to student-centered (Florida Center for Instructional Technology, n.d.). It can also be seen as the many and varied intersections among the skills of technology, pedagogy, and content, known as TPACK (What is TPACK? <http://www.ttf.edu.au/what-is-tpack/what-is-tpack.html>). This framework is too complex for a complete description here, but one major tenet is applicable to the present project. That is, technology as applied to education is not a separate set of unrelated skills, but rather an integrated part of what teaching is all about. Educators often speak of teaching methods (pedagogy) and subject matter (content) as working together in an effective teacher, but in today's world, the third element of technology must be considered as equally important.

The preservice teachers in this project need to become comfortable using iPads and they need practice using them in authentic classroom settings with children. As assignments are developed for the project, recommendations from the literature can serve to guide the process. First, teachers' positive attitudes toward the technology they are using is a significant factor in its success with students (Hadfield & Jopling, 2014; Hicks, 2011). Second, teachers need to create classroom policies about wireless devices that emphasize good manners and consideration of others (Fisher and Frey, 2015; Tucker, 2015). Third, devices should be used as collaboration tools, rather than isolating students by only assigning independent projects (Daccord & Reich, 2015; Fisher & Frey, 2015). Fourth, while

a plethora of educational apps are available, teachers need to narrow their selections to those that target the content of their state standards and their students' learning goals (Attard, 2013; Powell, 2014).

The intentional planning of an iPad initiative at a small college can be conceptualized through the following six elements:

1. *Gather information and support from experts inside the college.*

First, the iPad initiative was championed by one faculty member and then supported by the college administration. The administrator's vision was for the iPads to be connected to specific projects and threads throughout the education program, especially those that provide evidence for proficiency towards teaching standards. The education faculty submitted a proposal that described a variety of possible ways they could integrate iPads and meet those goals. As well, the college's information technology department provided support to the faculty in a number of ways. They handled the budget and purchased and set up the iPads. They distributed and collected all of the students' iPads and chargers at the beginning and end of each semester. They made sure each education faculty member had the same iPad as the students. They made sure the classroom had Apple TV so the students' work could be displayed on the large screen. They answered students' and faculty's questions as needed throughout the year. They also joined the education faculty in many of the other elements described here.

2. *Gather information from experts outside the college.*

Two consultants from the education division of the computer company came to the college in the semester before implementation and encouraged the faculty to articulate a vision for their use of iPads. The result was a concisely conceptualized purpose: students will use the technology to synthesize concepts and create new knowledge. In a second visit with the faculty, the consultants provided many ideas about applications and approaches to integrating the iPad into student learning. They guided the faculty members to narrow down

the student assignment they would start with and agree on an application that would best accomplish that assignment.

3. *Start with a small first step.*

The education faculty discussed various education courses and assignments and together agreed to select one course that included all freshmen in elementary and special education. A course in Children's Literature was selected because it consisted entirely of the target group. Then the assignments within that course were discussed and the faculty as a team selected one. The selected project was to create a poster about a children's author that would be motivating to children of a selected grade level. This assignment was selected because in the past it had been created by hand with glue, paper, pictures, and the like. The team felt this would be a good way to see if the students could produce an adequate equivalent to the hand-made poster using an iPad.

4. *Participate in targeted training.*

The application called *Explain Everything* was selected to begin the project. Since it was new to many of the faculty and others involved, designated time was spent on learning its features and creating practice projects with it. The instructor who would be using it in her course worked independently as well to learn more about how to use the application. The library staff, as described in the next section, also spent designated time learning this app and practicing ways to apply it to the children's literature assignment.

5. *Collaborate with the college's library staff.*

In this small college environment, the library staff is the dedicated resource for student assistance in learning new technology. Two librarians made several commitments that supported the education department's iPad initiative. They joined in the targeted training on the app, *Explain Everything*. They taught the students how to use this app during a selected children's literature class, about a month into the semester. They created examples of author posters to demonstrate its features to the class. They made themselves available and checked in periodically with the

available and checked in periodically with the students to provide support regarding the assignment and the application.

6. *Begin using the iPads and evaluate their progress.*

The designated assignment was completed by the freshman students in the children's literature course. While the *Explain Everything* app was taught, any app that produced a similar result was also considered acceptable for the assignment. Discussion among students of the merits of different apps was encouraged in class. About half of the students in the class decided to use an application called *Show Me* instead of *Explain Everything* because it was free. It produced a similar result and did fit the assignment requirements, but some features were not available that could have provided a bit more color and interest. This limitation was not included as part of the grading of the assignment.

Conclusions

Interesting and creative author posters were developed using the iPad. Each student displayed her poster on a large screen and talked about its components and why she chose them for this assignment. In terms of applying this new learning to an authentic K-8 classroom, teachers could display a poster on a large screen or children could explore the poster on an iPad screen individually or in small groups. Hand-made posters certainly allow for creativity from the teacher and look attractive, but they can be awkward to store and may not hold up well from year to year. The digital poster can be used repeatedly and updated any time by the teacher. In regard to the digital author poster for the children's literature course assignment, the faculty decided to continue it as the first introduction to the iPad for each new freshman class.

The most important outcome learned by the education faculty members over the year was the value of teamwork and interdependence in a small college. The faculty envisioned how to implement a new initiative with multiple constituents within, and outside of, the college community. The vision had to include how and why the preservice teachers would use the technology.

College-wide support in acquiring the iPads for each new group of targeted incoming freshmen will be essential for continuation of the project. The first year started with a single course and an assignment that specifically used the iPad. In the years ahead, more robust strategies will be implemented to continue to address the goal: *the students will use the technology to synthesize concepts and create new knowledge.*

The next years will involve creating more required assignments for students to use their iPads as they progress through the program. They will be encouraged to broaden their experiences in their own ways as well. They will have opportunities to try out many uses for the iPads in authentic K-8 classrooms over the years. A spiraling design is the vision for the future, that is, guidance is first provided in basic iPad uses, then authentic opportunities to use them in classrooms, followed by more college classroom guidance, and so on (Mullenburg & Berge, 2015). As they progress through the years, the students' use of iPads will become more sophisticated. An additional plan is to have students incorporate into their e-portfolios a reflection on how they have integrated technology into their view of themselves as teachers.

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