Laptop Computers in Teacher Preparation: Lessons Learned from the University of South Florida Implementation

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ABSTRACT

THIS ARTICLE provides an overview of the successful laptop implementation in the College of Education at the University of South Florida (USF). The pilot initiative began with one cohort of preservice teachers in 2003; since then, the program has expanded throughout the college. Through a chronological outline of the issues, formative evaluations, modifications, and expansion of the project as it progressed through the years, this article shares lessons learned related to the process and outcomes. For example, initial implementation decisions included issues such as whether participation should be voluntary or mandatory, which computer platforms would be supported, and how training and support would be provided. As the project expanded, questions related to ongoing maintenance, financial aid, and other issues were addressed. (*Keywords: laptop computers, preservice education, technology integration*)

INTRODUCTION

WIRELESS TECHNOLOGY makes it possible to create an exciting student-centered environment where learning can happen anytime, anywhere, thereby changing how preservice teachers learn and, consequently, how they teach and transfer skills to their own students. As college students are exposed to different instructors modeling creative ways of integrating technology into the curriculum, they begin to regard technology as a natural component in acquiring and sharing knowledge. Technology becomes a learning tool, rather than merely an "add-on" or a challenge (Profiles in Success, 2005). Mobile technology is especially appropriate for student teachers. "By definition they're roaming from place to place. Coming into a classroom with their own computers, with lessons they've already prepared and are familiar with, seems like the ideal way of focusing on the subject, and not letting technology get in the way of teaching" (Profiles in Success, 2005, p. 1).

This article provides an overview of the successful laptop implementation at the University of South Florida (USF), which began with a pilot initiative in 2003. Through a chronological outline of the issues, formative evaluations, modifications, and expansion of the project as it progressed through the years, this article shares lessons learned related to the process and outcomes.

PROJECT MISSION AND GOALS

IN FLORIDA, ALL TEACHERS are required to integrate twelve *Educator Accomplished Practices* into their teaching (Florida Education Standards Commission, 2006). One of the practices relates specifically to technology, stating:

> The preprofessional teacher uses technology as available at the school site and as appropriate to the learner. She or he provides students with opportunities to actively use technol-

ogy and facilitates access to the use of electronic resources. The teacher also uses technology to manage, evaluate, and improve instruction. (p. 18)

The USF College of Education is the seventh largest college of education in the nation. They graduate more educators than any other university in Florida—over 50,000 educators in USF's 50-year history. Prior to 2003, technology education within the USF College of Education was delivered through a required, entry-level "Technology in Education" course (EME2040).

However, many educators believe that in order to break the cycle of the old adage, "we teach as we were taught," and offer new models for preservice teachers, faculty members in teacher preparation programs must abandon some of the strategies they learned when they were students (Lang, 2005), and preservice education programs must rethink "the manner in which they are preparing tomorrow's teacher to use technology" (Rowley, Dysard, & Arnold, 2005, p. 105). This philosophy was endorsed by a report, *Will New Teachers be Prepared to Teach in a Digital Age?*, recommending that technology instruction "should be integrated into other courses and SCDE [schools, colleges, and departments of education] activity, rather than being limited to stand-alone classes" (Moursand & Bielefeldt, 1999, p. 3).

In the 2003-2004 academic year, the USF College of Education recognized an opportunity to address the *Educator Accomplished Practice* related to technology through a laptop initiative. The following goals were established for the laptop initiative: (a) to equip students, university, and school personnel with 21st Century knowledge and skills, (b) to improve the quality of teachers and increase student performance, (c) to reform teaching methods and optimize learning through the integration of technology into the preservice curriculum, and (d) to lead research and evaluation efforts in the area of innovative technology initiatives (College of Education Laptop Initiative, 2006).

YEAR ONE: INITIAL IMPLEMENTATION

AFTER THE DECISION was made to implement a laptop initiative, several different approaches were considered. One option was to require all preservice students to purchase a laptop. Another option was to begin with a small pilot program, wherein the laptops could be purchased by the students or purchased by the university. Other considerations included whether participation in the program should be voluntary or mandatory, which computer platforms would be supported, and how training and support would be provided.

The first step in outlining a strategy at USF consisted of reviewing similar initiatives. A noteworthy leader in the field of preservice laptop programs was the University of Texas (UT), Austin. In 2002, after completing a successful pilot program, the College of Education at UT Austin implemented a laptop requirement for all preservice teachers; the program is called the *Laptop Initiative for Future Educators* (LIFE). During the summer of 2003, representatives from the LIFE program were invited to the University of South Florida to discuss their challenges and lessons learned (Laptop Initiative for Future Educators, 2007). Insights from the representatives, along with information from the LIFE Web site were very helpful in the initial stages of the USF program.

The next step at USF focused on identifying those who would be intimately involved with the project. Through a series of brainstorming and process-mapping sessions, an executive committee was formed with representatives from the following stake-holders: preservice education students, computer store associates, Apple Computer representatives, and College of Education faculty members, administrators, trainers, and support personnel. Under the guidance of the Associate Dean, this committee convened on a monthly basis, wrestled with various options, developed relevant policies, and provided direction for the laptop initiative.

PILOT VS. FULLSCALE IMPLEMENTATION

Based on the input from UT Austin, financial considerations, as well as the desire to start with a volunteer program rather than a top down mandate, USF decided to begin with a pilot program in the fall of 2003. An important consideration was to ensure that the laptops would be thoroughly infused into the curriculum for the participants. One way to focus on specific faculty and students was to implement the program with a cohort of students, who would follow the same course sequence. Because the Childhood Education department was already eager to participate and structured by cohorts, the decision was made to pilot test the program with a cohort in that department. After the first cohort was identified, professors were invited to participate in the laptop initiative. Incentives in the form of hardware (a new laptop computer), software, and training were offered to the faculty members who agreed to teach courses in the cohort.

SINGLE PLATFORM VS. MULTIPLE PLATFORMS

Another major decision involved which computer platforms to support the laptop initiative. Although Apple Computer offered to support the initiative with competitive prices and training expertise, some members of the Executive Committee thought that Mac and PC platforms should be supported equally. It should be noted that the USF College of Education was predominately a PC environment at this time. For example, all of the open labs and teaching labs in the College consisted of PCs, and about two thirds of the faculty members had PCs in their offices.

However in discussions with program directors at UT Austin, as well as the USF technical support team, concerns were raised regarding the resources and training that would be required to support two different platforms. In addition, it was deemed beneficial to provide maximum interoperability for all students in the program, so they would be able to easily share files, communicate, and use the integrated software provided by Apple such as iChat, iMovie, and so forth. Ultimately, the decision was made to integrate only Apple computers (iBooks with iSight videoconferencing equipment) into the pilot ini-

tiative. Fortunately, a complete wireless network was already in place within the College of Education.

VOLUNTARY VS. MANDATORY

The USF College of Education is primarily an urban, commuter college. Approximately 76% of the students rely on some form of financial assistance for tuition and fees. To alleviate any financial impact on the students in the pilot study, the computers were purchased by the College of Education and loaned to the students for the duration of their studies.

To recruit volunteers for the laptop initiative and thereby form a cohort, an overview of the project was included in the preservice student orientation for Childhood Education in the fall of 2003. The students who attended the orientation were given the option of participating in the program and receiving a loaner laptop. The self-selecting, voluntary model worked very well. Out of 113 new elementary education students, it was relatively easy to interest 25-30 students in participating in the laptop initiative. Faculty involvement was also voluntary. Hardware (a new laptop computer), software, and training were offered to the faculty members who taught courses in the cohort. In return, the faculty members agreed to attend training sessions and modify their courses, as appropriate, to infuse the laptops.

TRAINING AND SUPPORT

Implementing an initiative involving laptops in a College of Education required a great deal of training of and support for faculty and student participants. The instructors had to be able to successfully use the hardware and software associated with the iBooks, in addition to integrating it effectively into their curriculum. As noted by McAnear, "staff development is moving from a focus on technology skills to a focus on integration" (2002, p. 4). Student participants also needed to develop basic technology skills and required support for software and hardware issues.

During the first year of the pilot program, existing resources and personnel within the USF College of Education were combined with resources and training sessions provided by Apple Computer. At the beginning of the year, Apple trainers conducted two-day-long workshops for students and faculty members. These workshops focused on working with the iBooks and iLife applications (such as iPhoto and iMovie). Most of the hardware issues were handled through AppleCare, which was purchased to extend the computers' warranties.

The Florida Center for Instructional Technology (FCIT) provided ongoing training and support throughout the year. This grant-funded center is located in the USF College of Education and helps to promote technology integration throughout the state of Florida. Four people from their staff were directly responsible for the training and support efforts related to the laptop initiative. The Director of FCIT served as the coordinator and provided individual support to faculty and students throughout the project. Three of the project's trainers were employed by FCIT as Educational Technology Integrators (ETIs). Their role in this position was to provide training and support for educators throughout Florida, through a variety of technology workshops. They spent approximately 20% of their time in the College of Education, providing individual support for faculty and students involved in the laptop initiative. This support included problem-solving software issues, as well as providing assistance on technology integration strategies.

YEAR TWO: EXPANSION AND FORMATIVE EVALUATION

D URING THE SECOND-YEAR OF THE PILOT, the initial cadre of students progressed to their senior- and final-year in the preservice program and began their internships in local schools with their laptops. Meanwhile, the project was expanded to include another cohort of Childhood Education majors (N = 30), as

well as a cohort of Special Education majors (N = 25). Both new cohorts were entering their junior year.

When the cohort from the Special Education department joined the initiative during the second-year pilot, the voluntary model had to be modified, because there was only one cohort in Special Education. Following discussions with the faculty, all of whom were enthusiastic about the laptop initiative, the decision was made to require participation for all incoming students. In this case, the students were notified by letter several months prior to orientation to ensure that they were aware of the requirement as early as possible. At this point, the College of Education could no longer afford to purchase and loan computers to students; instead, the college administrators decided to contribute $350 toward the purchase of each laptop. To alleviate some of the financial impact on the students, arrangements were made with the campus computer store for interest-free loans. The Financial Aid Office also agreed to include the price of the laptops in students' loan packages, if they so desired.

For the most part, the laptop initiative continued to run smoothly. During the first year of the pilot, several faculty members had completely restructured their courses to integrate the mobile technology. As a result, the laptops and other technology were infused into the cohort's courses, and at least two of their classes each semester were redesigned by the faculty members to make technology an integral part of the curriculum. In many cases, students were required to bring the laptops to class, so they could participate in online research, collaboration, concept-mapping, and other activities during class sessions. Students were also expected to create Webquests, movies, and other digital presentations as part of their assessments.

Student reflections (Schön, 1987; Wellington, 1991) also provided an integral aspect to the implementation of the laptop initiative. Through weekly narratives and teaching cases, the act of reflecting enabled the students to explore their actions and thoughts and frame their experiences (Richards, Morris, & Schwartz, 2004). For example, one student wrote, "I am getting past my insecurities of technology to not just better myself, but to benefit my future students." Another

student stated, "Being a part of this laptop program has somewhat changed my philosophy of education. Now I realize how important it is for students to become familiar with technology."

Online communities of practice were also implemented to provide a social support system with a common base on which to discuss, learn, and share issues and concerns (Sim, 2006; Wenger, 1998). Through the use of iChat, students were encouraged to communicate with each other and their instructors on a regular basis. As one student noted,

> I also enjoy knowing that I have 24 other people that I can share my worries and successes in regard to the computers (amongst other things). I know that these students are going through the same feelings and anxieties that I am going through, so it is comforting to know that I am not alone.

As the laptop pilot progressed into its second year, formative evaluations were conducted to determine what modifications to the program might be appropriate. The formative assessments included faculty surveys, focus groups with the FCIT trainers, and "exit" interviews with the first cohort of students who turned in their loaner laptops, after having been in the program for two years.

FORMATIVE EVALUATION: FACULTY SURVEY

The initial pilot, Childhood Education, involved nine faculty members; nine more faculty members in Special Education joined the project during the second year. Near the end of the second year of the pilot, all eighteen faculty members were invited to complete a survey. Of the 18 faculty members, nine completed the Web-based survey.

The survey contained five domains focusing on the faculty members' perceptions of: (a) their use of the laptops, (b) their perceptions of students' use of the laptops, (c) their perceived benefits and rewards of integrating laptops into their courses, and (d) their perceptions of the challenges experienced during their participation.

Faculty Use of Laptops. Table 1 displays a list of options that were presented to faculty members for using laptops within and outside the classroom. In order to compare the faculty members' reasons for using laptops, average use was computed (based on a 1 - 4 scale with 1 = *Rarely*; 2 = *Occasionally*; 3 = *Frequently*; and 4 = *Routinely*). Out of 15 options, *Manage student records and progress* appears to be the primary reason, with a mean of 3.38 (SD = 1.19). High means

Table 1.
Descriptive Statistics: Reasons for Using the Laptop (Faculty)

Item	N	Mean	SD	Min	Max
Manage student records and progress	8	3.38	1.19	1	4
Make presentations	8	3.25	1.16	1	4
Teach lessons in classroom	8	3.25	1.16	1	4
Load instruction and materials into Blackboard	8	3.13	1.36	1	4
Engage students in group activities	8	3.00	1.07	1	4
Communicate with students as a group	9	3.00	1.32	1	4
Access resources and activities on the Web	9	3.00	1.22	1	4
Communicate with students individually	8	3.00	1.20	1	4
Create instructional materials for my students	9	2.89	1.17	1	4
Demonstrate activities	9	2.78	1.30	1	4
Create assessment/evaluation materials	8	2.75	1.39	1	4
Plan instruction	9	2.67	1.32	1	4
Create surveys or assessments	9	2.33	1.12	1	4
Conduct research	9	2.33	1.41	1	4
Teach lessons at a distance (Internet)	9	1.33	0.5	1	2

were also noted for *Make presentations* and *Teach lessons in classroom* (M = 3.25, SD = 1.16) and *Load instruction and materials into Blackboard* (M = 3.13, SD = 1.36). Of the 15 options presented, the lowest mean (1.33, SD = 0.5) was reported for the use of laptops for *Teaching lessons at a distance*.

Student Use of Laptops. Faculty members were also asked to respond to a list of reasons their students might use the laptops. To allow comparison of the responses, average use was again computed (based on a 1 - 4 scale with 1 = *Rarely*; 2 = *Occasionally*; 3 = *Frequently*; and 4 = *Routinely*). The results of this analysis are presented in Table 2. Faculty indicated that their students routinely used their

laptops to *Complete class projects/assignments* (M = 3.57, SD = 0.53), *Communicate with instructors* (M = 3.50, SD = 0.76) and *Collaborate with student colleague* (M = 3.50, SD = 0.93). Faculty respondents shared their perceptions that students more rarely used laptops to *Conduct research* (M = 1.38, 0.74)), *Take surveys* (M = 1.50, SD =

Table 2.

Descriptive Statistics: Reasons for Using the Laptop (Students)

Item	N	Mean	SD	Min	Max
Complete class projects/assignments	7	3.57	0.53	3	4
Communicate with instructors	8	3.50	0.76	2	4
Collaborate with student colleagues	8	3.50	0.93	2	4
Communicate with other students	7	3.43	0.79	2	4
Learn to integrate technology in their teaching	7	3.43	0.79	2	4
Take notes	7	3.29	0.76	2	4
Learn information and skills covered in course	8	3.13	0.83	2	4
Create materials for their own teaching	8	3.13	0.83	2	4
Track grades and assignments	7	2.57	1.13	1	4
Take assessments, such as exams and quizzes	7	1.86	1.21	1	4
Take surveys	8	1.50	0.76	1	3
Conduct research	8	1.38	0.74	1	3

0.76), or *Take assessments, such as exams and quizzes* (M = 1.86, SD = 1.21).

Benefits of Integrating Technology. In order to compare the faculty members' perceptions of the benefits or rewards of integrating technology, averages were computed (based on a 1 - 4 scale with 1 = *Not rewarding*; 2 = *Small reward*; 3 = *Rewarding*; and 4 = *Very rewarding*). As a result of participating in the laptop initiative, *Opportunity to try new things* and *Quality of interaction with students* were the most highly rated benefits with means of 3.56 (SD = 1.01) and 3.38 (SD = 1.06) respectively (see Table 3). Other highly ranked benefits were *Sense of creativity* and *Increased student enthusiasm* (M = 3.13, SD = 1.13 for both items). The lowest ranked benefits were *Professional recognition* with a mean of 2.11 (SD = 0.60) and *Flexibility of time* with a mean of 2.13 (SD = 1.13).

Table 3.
Descriptive Statistics: Benefits or Rewards in Integrating the Laptop into Courses

Item	N	Mean	SD	Min	Max
Opportunity to try new things	9	3.56	1.01	1	4
Quality of interaction with students	8	3.38	1.06	1	4
Sense of creativity	8	3.13	1.13	1	4
Increased student enthusiasm	8	3.13	1.13	1	4
Creation of student-centered environment	9	3.00	1.00	1	4
Increased student achievement	9	2.78	1.09	1	4
Flexibility of place	7	2.71	1.38	1	4
Flexibility of time	8	2.13	1.13	1	4
Professional recognition	9	2.11	0.60	1	3

Challenges in Integrating Laptops. Challenges in integrating laptops were also reported by the faculty. Comparisons of their responses were made by computing averages (based on a 1 - 4 scale with 1 = *Not a challenge*; 2 = *Small challenge*; 3 = *Noticeable*; and 4 = *Very big challenge*). While the challenges presented were ranked low overall (see Table 4), *Amount of time to adapt or create materials* and *Off task student behaviors* were ranked as the most challenging aspects of integrating the laptop into their courses (M = 2.44, SD = 1.01, and M = 2.44, SD = 0.73, respectively).

Table 4.
Descriptive Statistics: Challenges in Integrating the Laptop into Courses

Item	N	Mean	SD	Min	Max
Amount of time to adapt or create materials	9	2.44	1.01	1	4
Off task student behaviors	9	2.44	0.73	2	4
Lack of institutional support	9	2.22	1.09	1	4
Instability of technology, networks, platforms, etc.	8	2.13	0.83	1	3
Time required for professional training	8	2.00	1.07	1	4
Technology skills of students	8	1.88	1.13	1	4
Expectations of students	9	1.78	0.83	1	3
Personal expense of hardware and/or software	9	1.67	0.71	1	3
Lack of professional recognition	8	1.38	0.52	1	2

FORMATIVE EVALUATION: TRAINING AND SUPPORT

To investigate issues related to training and support, a protocol was developed to conduct focus groups and interviews with the FCIT trainers. Several themes of interest were identified and structured into an open-ended format. The themes included: (a) workshop and other formal training initiatives, (b) individual assistance provided for and requested by faculty members and students, (c) software issues related to the project, (d) hardware issues related to the project, and (e) "lessons learned" and other recommendations for future implementations.

The results from the focus group sessions and interviews with the trainers illustrate the importance of having sufficient training and support for a project such as a laptop initiative. Several positive and negative themes emerged from the interviews (see Table 5).

The perspectives of the support team provided valuable insights into the implementation of the laptop initiative. They, like no one else, were witnesses to the diverse issues that confronted the faculty and students. For example, a marked increase in the requests from the faculty members involved with the laptop initiative for the use of the mobile laptop cart was noted. They were not requesting the use of the laptops for the students involved in the cohorts (since they already had laptops); instead, they wanted the cart so they could integrate technology into the curriculum of the nonlaptop classes. Another extension of the project was noted relative to the students. As the students became more and more comfortable with the laptops, they wanted to integrate technology into their internships. Unfortunately, some of the schools where they interned did not have computers in the classrooms. The students then turned to FCIT to request the use of mobile laptops for the schools. In several cases, FCIT personnel were able to arrange to take the laptops to the schools in nearby districts, thus enabling students to integrate technology more fully into their internship experiences.

Table 5.
Major Themes from the Interviews with Trainers

	Positive Theme	Negative Theme
Workshops	Provided basic skills	Vendor did not adequately address needs
	Conducted with project equipment	Not well attended by faculty
	In-class workshops for students worked very well	Three days of training is not enough
Hardware	Focusing on only one platform (Apple) minimized support issues	Not enough peripherals for the faculty to check out (cameras, scanners, etc.)
	Apple warranties worked very well for most technical issues	There was no mechanism for students to check out equipment or work with peripherals
	No major problems with iSight	There was no open lab or facility for students to use for their projects
	Battery life was not a major problem	
	Faculty had access to cameras, scanners, probes, microscopes and video cameras	
Software	iLife suite provided a wealth of options	Students mistakenly trashed applications
	Microsoft Office was beneficial	Students did not have original software; therefore, could not re-install
	Inspiration offered many possibilities for technology integration	
Individual Assistance	Faculty actively sought assistance on ideas for technology integration	Personnel were available on a limited basis – trainers had many other responsibilities and were not on campus many days
	Faculty requested trainers to model lessons in their classes	There was no lab for students to practice or prepare for class
	Trainers took laptops out to schools where students were interning	

FORMATIVE EVALUATION: STUDENT PERCEPTIONS

An exit survey was administered to all students from the first cohort when they returned their iBook laptops (which they had on loan) at the end of their studies (after two years in the program). The purpose of this survey was to gather information from the students regarding their perceptions of the laptop initiative. Information was gathered on their future plans for the purchase of a laptop and what type of laptop they might purchase. The students were also asked

about the support they received, what they liked most, and what needed improvement during their laptop experience. Of the 25 students who began the cohort, two dropped out of the college prior to completion, and one delayed graduation for a semester.

The 22 graduating students were given an appointment time to return their laptop computers. As each of the responding students arrived, he or she was given the survey to compete. Fourteen students arrived at their appointed time and completed the survey. An e-mail was then sent to all 22 participants asking them to complete the survey as an attachment if they had not already done so; two responded, resulting in a total of 16 respondents.

Participating students viewed the laptop initiative very favorably. All of the students indicated they were satisfied with the program and would recommend it to other students. Eighty percent reported that they had "enough support" during the initiative. In addition, the students unanimously supported the choice of a single platform and recommended that the single platform approach be continued in the future. Students' comments across all items could be classified into the following categories: *Faculty Support, Student Collegiality, Economics,* and *Learning (Content and Technology).* Their comments in these areas are summarized in the following paragraphs.

Faculty Support. Students commented positively on the accessibility of the faculty members, their helpfulness, and the quality of their instruction. Suggestions for improvement included better initial training for students and a single point of contact to serve as a conduit for problems.

Collegiality. Students addressed topics such as developing life long friends. They also noted the advantages of learning to work together with their peers and having 24 colleagues to turn to for help and support at any hour of the day or night. Several comments centered on the ease of collaboration through iChat and other venues that had enhanced their social network.

Economics. Students reported an appreciation for having a "free" loaner laptop during their studies. They commented that schools are making large investments to place computers in the classroom and

that teachers must be prepared to use them if the investment is to be viable. They also lamented that they could not keep the laptops they were assigned. Areas they suggested for improvement were to create options for students to purchase their laptops and not ask students to pay for repairs to computers that are not their own property.

Learning (content and technology skills). Related to learning content in general, students commented on their ability to apply what they were learning in the classroom in their internships. They felt they would be better teachers as a result of their experience in the laptop initiative. In the area of learning technology skills, they commented on the benefits of learning to use a computer and becoming more comfortable in using computers in the classroom. One area they suggested for improvement was to infuse better technology and instruction in all their courses.

YEAR THREE: IMPLEMENTING CHANGE

IN THE THIRD PHASE OF THE PILOT (2005-2006 academic year), the number of students participating in the laptop initiative increased to 120, including students from the Foreign Language Education program, Childhood Education, and Special Education. The Department of Special Education took an extra step and required Master's students to participate in the project.

In addition, the Florida Legislature, in a true partnership gesture, generously provided $500,000 to enhance the laptop initiative. This helpful investment was coordinated through the offices of Florida Senate President, Tom Lee (R-Brandon). The Associate Dean drafted a budget that would spread the funds over a three-year period. The budget divided the funds between different units within the college, including FCIT, technical infrastructure, and the Dean's office. Based on the increased funding and the formative evaluation of the first two years, several changes were implemented in the program, including enhancements to support and training.

ENHANCEMENTS TO SUPPORT

Several changes were implemented in the program to address the need for ongoing technical and instructional support, for students and faculty. For example, before classes began in fall 2005, instructors new to the laptop project received their laptops well in advance of their students and were offered basic initial training. Another major enhancement was the availability of a Laptop Lounge where students, as well as faculty, could work collaboratively or individually on innovative projects. In the Laptop Lounge, basic technical assistance and strategies for innovative instruction were provided by a full-time support person, along with graduate assistants. The lounge was equipped with technology for scanning, video and audio production, digital photography, and much more. The Laptop Lounge was designed to be an inviting environment that is accessible all day (8-5) to students and faculty (see Figure 1).
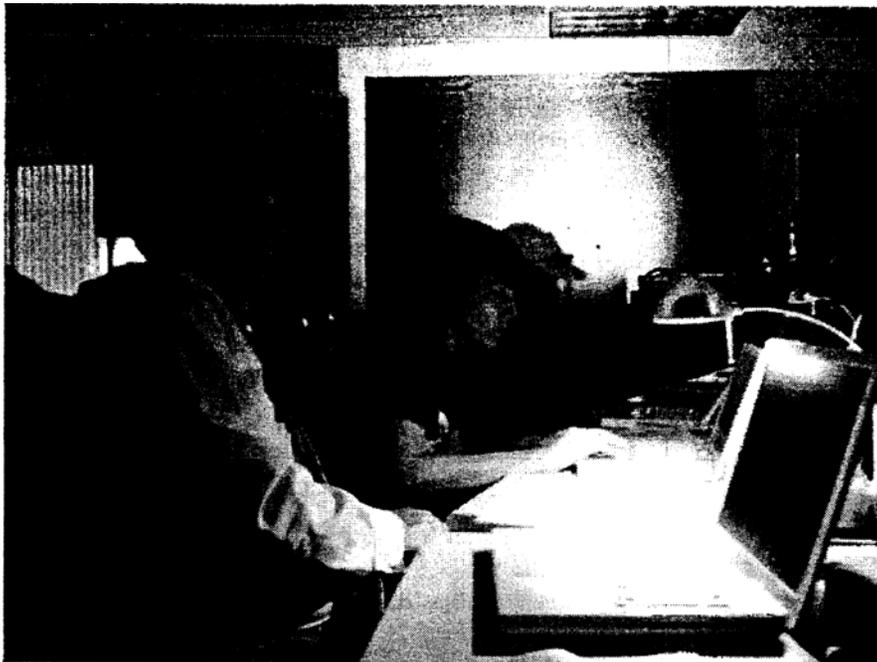
Figure 1. Students and Faculty Working in the Laptop Lounge

Another important change during the third-year was the way training was conceptualized and offered. During the first year of the pilot, students received a day of basic training followed by a more advanced session later in the year. With the addition of a full-time trainer in the third year of the program, the training opportunities for faculty and students greatly expanded, offering a flexible schedule of workshops to reach as many students as possible. Students coming into the lounge for a short period of time often received "on the spot" training sessions that address a specific need. Short workshops were also offered on a regular basis (often during lunch time) on topics such as how to use software (such as Pages, Keynote, iMovie, iTunes, and GarageBand) to enhance instruction.

In addition to open training sessions in the Laptop Lounge, faculty participating in the initiative received additional support in adapting existing course work and developing pedagogical ideas for integrating technology into courses. A Help Desk, staffed with a part-time technical support person and part-time graduate assistants, assisted students and faculty with hardware and software problems and loans out peripherals, such as iSight cameras, power cords, extra batteries, cables, and laptops. In addition, a reservoir of online resources was created, such as podcasts and job aids (see Figure 2).

YEAR FOUR: BEYOND THE COHORT MODEL

AS THE PROJECT expanded into the fourth year (2006-2007 academic year), students and faculty in the Secondary Education Department were invited to participate in the program (see Figure 3). In addition, the Childhood Education Department ceased using the cohort model, preferring to integrate students throughout their programs. They are making a concentrated effort to infuse technology throughout their undergraduate and graduate teacher preparation curriculum.

The Laptop Lounge continues to be extremely effective and has implemented an "outreach" program, wherein trainers target specific
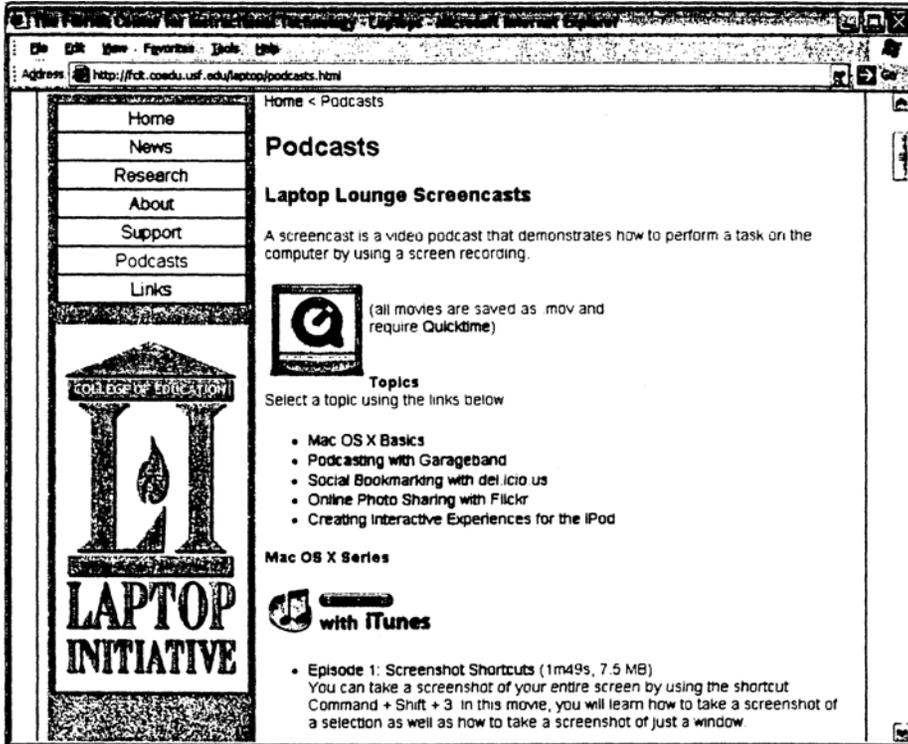
Figure 2. Web Site with Resources for Laptop Initiative

Fall 2003 | Spring 2004 | Fall 2004 | Spring 2005 | Fall 2005 | Spring 2006 | Fall 2006 | Spring 2007 | Fall 2007 | Spring 2008 | Fall 2008
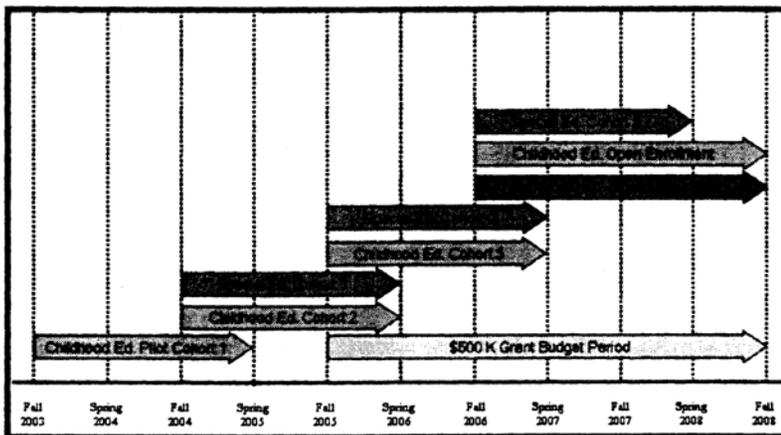
Figure 3. USF College of Education Laptop Initiative Timeline

faculty needs by meeting with individual faculty members in their offices. The design and development of new technologies is also being encouraged and supported. For example, faculty members wrote proposals about how they could implement podcasts in their courses. After the proposals were reviewed, 27 faculty members were awarded iPods and peripherals. The support personnel in the Laptop Lounge are now conducting the training and support for this initiative.

As pointed out in the report sponsored by Apple Computer, "To date, research has not kept up with the rapid expansion of 1 to 1 initiatives or with their breadth" (2005, p. 2). In addition to the continuation of formative evaluation efforts, several research studies related to the laptop initiative have been conducted at USF. One study by Barron, Hogarty, Lang, Kromrey, Hilbelink, Venable, and Feyten (in press) found that interns who participated in the program for two years were rated significantly higher (by both cooperating teachers and university supervisors) on factors related to technology standards outlined by the International Society for Teachers in Education (ISTE). In addition, qualitative studies have documented case studies and faculty reflections (Feyten, Allsopp, Cranston-Gingras, Evans, & Venable, 2006). Currently, researchers in the Special Education Department are examining undergraduate student gains in knowledge and comfort with technology use and how those gains relate to various forms of support provided by the college.

As the USF laptop initiative nears the end of its fourth year, discussions are underway to determine whether or not to require laptops for all students entering the College of Education. To date, the laptop initiative, with its focus on technology integration, has been very successful. It has facilitated cooperative learning and motivated students to become more engaged in the educational process. The students have acquired the skills and knowledge necessary to successfully integrate technology into classrooms. One of the student reflections included this statement: "I look forward to using this knowledge in the classroom and also sharing my knowledge with future co-workers. I really hope the schools will be falling over themselves to hire us because of this" ! Indeed, based on the number of calls to the

College Dean from district superintendents asking for the "list of students in the laptop initiative who are ready to graduate," the student's wish is coming true!

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