FROM TEXT TO JAVA IN ONLINE LESSONS
A PROGRESS REPORT ON A PT3 PROJECT
AT THE UNIVERSITY OF ILLINOIS

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ABSTRACT

The US Department of Education funded multiple PT3 (Preparing Tomorrow's Teachers to Use Technology) projects whose goals were to increase technology fluency in pre-service teachers and to infuse technology into teaching and learning in the K–12 grades. This report describes what we proposed to do, what we've accomplished, and what we've learned. Examples of technology integration (from text to Java) are demonstrated. Our support structure for providing services to university faculty, pre-service and cooperating teachers is described. Changes we plan to make as we move into the 2nd year of the project are explained.

Overview

There are three major components to our PT3 project: Curriculum Integration, Faculty Development and Tech to Go. The Curriculum Integration component supported nine faculty members selected by the department of Curriculum and Instruction to receive intensive, just-in-time support in integrating technology into their curricula. One full-time staff person and five graduate assistants were allocated to this effort. An additional fourteen faculty members (some of whom overlapped with the Curriculum Integration faculty) submitted proposals for semester-long projects and received stipends to participate in the Faculty Development Component. One full-time staff person, one .6-time staff person and two graduate assistants were allocated to this effort. The Tech to Go component provided a variety of hardware, from digital cameras to wireless labs, for checkout to pre-services teachers who were student-teaching in one of three local school districts. Two full-time staff members and two graduate assistants were allocated to this effort.

Curriculum Integration

The support provided in the Curriculum Integration component of the project covered a range of activities. Among other things, we developed Web pages for two professors, provided e-portfolio support for an entire department, and developed math lessons using MS Office software for several math education professors. E-portfolios are frequently utilized to meet state and federal technology standards, in addition to teaching technology to pre-service teachers. We provided intensive e-portfolio assistance for two secondary education English courses (see http://talent.ed.uiuc.edu/showcase1.asp) as well as the entire department of Special Education. We developed Web pages for an elementary reading language arts course (http://www.ed.uiuc.edu/courses/CI375c1/index.htm) and for the Department of

Early Childhood Education (http://students.ed.uiuc.edu/YCHUNG2/ECE_2002 _1/index.htm). Another course Web page is in progress. We assisted another elementary reading professor who illustrated various stages of early reading when she produced a digital video of her and her son reading together. Working with secondary math education professors, several lessons were created that exemplified how to use technology to teach (more on that in Teaching with Technology, below), specifically, using Excel (see http://www.staff.uiuc.edu /~sfondili/ICTE/mathmatters.doc) and Power Point (see http://www.staff.uiuc.edu/
~sfondili/ICTE/moonmodeling.doc).

Faculty Development

Each of the fourteen faculty members who submitted proposals for the Faculty Development component of the PT3 project received a $4500 stipend for participating in the project. (Stipends were offered for the Faculty Development component, but not for the Curriculum Integration component, something that we plan to change for the 2nd fiscal year of the project. (See Lessons Learned, below). The two faculty development coordinators (1.6 FTE) collaborated with another full-time staff person in the office to provide digital video training to several of the participants. In one project, an entire class of 17 pre-service teachers was trained in shooting and producing a digital video (see http://talent.ed.uiuc.edu/video.asp). One of the faculty development coordinators produced a digital video portal that provides assistance to individuals who have questions about what equipment to use or what steps to follow in producing a digital video (see http://talent.ed.uiuc.edu /fdg/dvp/index.htm).

Tech to Go

We anticipated that our pre-service teachers might not have the same access to technology resources in their student teaching experiences as they have here at the university. Tech to Go addresses this problem by providing substantial hardware and software resources for check out. Laptops contain a suite of software including, in part, Microsoft Office, Adobe Photoshop Elements, Microsoft Encarta, Inspiration and Kidspiration. Pre-service teachers can also check out projection systems, scanners, printers, digital still and video cameras and complete wireless computer labs. These resources can fill in any technology resources "gaps" that may exist in the local school system. A series of workshops on PowerPoint, FrontPage, and the use of different hardware (e.g., digital cameras, wireless laptops and scanners) were conducted to assist students in using the Tech to Go resources (see http://talent.ed.uiuc.edu/events.asp). Initially, we targeted specific cohorts of students who were completing their student teaching in one of three local school districts.

Teaching with Technology

In Curriculum Integration, above, we briefly mentioned using technology *to teach*. How do we use technology to teach rather than simply teach technology? The online environment can lure one into glitzy implementations (e.g., streaming video, flash, Java) and avoidance of text. This does not necessarily guarantee good teaching with technology.

Text

What is text in the online environment? Text can mean a lot of different things. Syllabuses, lectures, e-mail messages, discussion posts can all be text. It may be how we use text that's important. In a discussion board like Web Board, read-only "conferences" can be used to post announcements, syllabus, lectures, etc. In this manner, we transmit information one-way (e.g., teacher to student). Note that we also do it "asynchronously"—the teacher and student (or student and other students) do not have to be logged in simultaneously. Simultaneous online text communication is usually something we call "chat". Private conferences can be set up in a discussion board so that students can post assignments (which only s/he and the instructor can see). Threaded discussion (or conferencing) is often implemented in the online environment as the (asynchronous) virtual equivalent of in-class discussion. The features of threaded discussions enable students and teacher to participate anytime, anywhere. Discussions are also documented for future reference. Selection of topics (new "threads") is controlled by the teacher or discussion board manager (who can surrender that control to selected students as desired). In fact, use of text in the online environment is not so simple. Some consider the use of course management systems somewhat more advanced. Blackboard and WebCT are course management systems. They both provide tools for teaching and learning activities like uploading course content, conducting asynchronous and synchronous communications, taking quizzes, evaluating students—usually implemented predominantly in text. For a comparison of the "look and feel" of these course management systems, see http://www.staff.uiuc.edu

/~sfondili/BbWebCT.htm. Be sure to check the Blackboard and WebCT Web sites for current features of these products. Both companies have new versions of their products in the mill.

Java

To see and use Java applets, go to the Math Science and Technology Education page (http://mstemac4.ed.uiuc.edu/java/). Try the Acid-Base Titration Lab. The Molecules in Motion applet at http://www.edinformatics.com/il/il_chem.htm is another interesting chemistry applet. Note that in order to use these applets in your own course, you simply reference the links in your Web page. It is often easier to use Java applets in a course than it is to use text.

University of Illinois Examples

For additional examples of using technology to teach, see http://www.cet.uiuc .edu/resources/pedagogy/words/. Click on Instructional Technology and the Foreign Language Curriculum and drag the pull-down menu under the "streaming window" to Mallard Gradebook to see an innovative use of what, to some, might seem an ordinary grade book program. The shading of the various grade book cells indicate attempts on that particular quiz question (darker means more attempts). An instructor can tailor the next day's *live* instruction based upon performance on an online quiz. Rather than being used as a summative assessment of student performance, the online quiz is being used as a teaching tool. Click on Online Education to Develop Complex Reasoning Skills in Organic Chemistry and drag pull-down menu to Lectures (and watch through the section "Elimination Reactions"). The online lectures contain topic summaries and links to other resources. The lectures are self-paced and problem solving (rather than rote memorization) is required. These online lectures go well beyond the simple presentation of material and are highly interactive. In fact, a student cannot "complete" the lecture without solving problems. Click on Using Technology to Teach Music Composition and drag pull-down menu to Meet Your Mentor (and watch through Mentor Introduction). University of Illinois students (in Champaign, IL) mentor music composition middle- and high-school students in the Chicago area. Exchanges of e-mail text messages can be rather impersonal. The Meet Your Mentor streaming videos personalize the mentoring relationships.

In all of these instances, it is how the technology is used rather than the technology itself that results in instructionally sound, even innovative, online instruction. During the first year of our PT3 project, we have relied predominantly on university faculty input to determine how to implement technology in their courses. As we move into our second project year, we hope to provide more instructional support (in addition to technology) to faculty as they learn new technologies.

Lessons Learned

We found that we had a significant overlap between the support we provide in the Curriculum Integration and Faculty Development components of our PT3 project. More than one professor asked which part of the project they should participate in. The big question was why would a professor want Curriculum Integration support (with no stipend) when they could get $4500 in the Faculty Development component? A commitment by professors to specific projects that involve stipends may encourage continuing participation. Simply having access to technical and instructional support (in the Curriculum Integration component) led to long periods of inactivity between professors and PT3 support staff. We are looking at re-defining projects (probably creating a range of smaller-scale projects to large-scale efforts) and providing a range of financial incentives based upon scope of project. We also plan to consolidate the Curriculum Integration and Faculty Development components of the project and combine resources.

One request for proposal (RFP) will be issued from the PT3 project as a whole. In the RFP, we plan to provide suggested components for building a PT3 project. In this manner, professors who might not otherwise have an idea of what they would like to do can construct a project by selecting appropriate components. We

envision these components as being comprised of workshops (e.g., PowerPoint, Excel, and iMovie), attendance at lectures, seminars, and/or brown bags, and one-on-one consulting, among other things. Several possibilities exist in utilizing support staff (both fulltime staff and graduate assistants). We plan to focus resources on high-demand areas (e.g., PowerPoint or digital video training) and offer a formal series of workshops on technology-related topics. We may assign grad assistants to specific faculty for pre-determined amounts of time or well-defined projects. We hope to improve upon how we handle incoming phone calls for immediate assistance.

We also decided to offer our Tech To Go checkouts to all student teachers within driving distance of the University of Illinois. Previously, we had restricted it to those students teaching in three school districts (locally) and who were in the student cohorts being taught by the faculty being supported by the Curriculum Integration component of the grant. Sound confusing? This did cause some confusion and some discontent among students (e.g., why does s/he get a computer and not me?).

Many teachers use technology. But, we need to make technology an integral part of the curriculum. We need to define what technology is and how to implement it in the curriculum. In the final analysis, we hope to provide our university faculty and pre-service teachers with the support they need to use technology *to teach*.

(Note: the associated PowerPoint presentation for this paper is available at www.staff.uiuc.edu/ ~sfondili/ICTE/icte.htm.)