Incorporating Undergraduate Energy in Supporting Technology in the Classroom

Mike Landavere
College of Life Sciences
and
Deborah Mateik
Office of Information Technology
University of Maryland
College Park, Maryland

Abstract
The Undergraduate Technology Apprentice Program at the University of Maryland is capturing the attention of faculty, students, and campus administrators. The program is based on the simple concept of training undergraduates in basic web and presentation technologies, then hiring them to work with a faculty member. The positive response from both faculty and students has been overwhelming.

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Pervasive Challenges
The lack of “adequate” technical support is a challenge common to most universities. The University of Maryland College of Life Sciences has experienced the growing need to support faculty with their technology needs for several years. The number of requests for technical assistance, as well as the complexity of needs escalated to appoint where College-based technical staff could not be effectively responsive.

Many faculty have availed themselves of free faculty development programs through which they learn of the innovative technologies with which they can transform their teaching. Interest and challenges have been felt most keenly since the adoption of WebCT as the campus course management tool nearly three years ago. It became the case the faculty interest in technology integration outpaced our ability to provide support.

The College of Life Sciences has approximately 200 faculty and 100 staff serving a community of 1700 undergraduate and 500 graduate students. Additionally, the College houses over 800 workstations in office and laboratory environments. Currently, there are five computer support staff available to meet the diverse technology needs of College’s infrastructure and constituents. In our initial attempts to supplement full-time staff with student assistants we discovered that many students in our disciplines were interested in being hired into a technical position, but few had the expertise or experience to do so without time-consuming, one-on-one training. Our full-time computer support staff did not have the time or energy to provide on-the-job training.

So, we set out to find a way to harness the energy and excitement of our students to assist in supporting our faculty and relieve the overwhelming technical demands on our computer support staff.

Our Solution: UTAP
The Undergraduate Technology Apprentice Program (UTAP) was started in January, 1999 as a collaboration between the College of Life Sciences and the University’s Office of Information Technology (OIT). The program trains discipline knowledgeable students in presentation and web technologies through a two-credit course. In addition to skills training, student participants are exposed to issues of design, accessibility, intellectual property rights, and pedagogy. The class meets two hours per week, with instruction provided by OIT instructional technology training staff and College technical support personnel. Subject-expert guest speakers also contribute to the expansive range of content covered in just 15 weeks.

The course is taught in a technology-rich computer classroom. Each student has access to an individual computer. Some training materials are provided as paper handouts; however, much of the content and support materials have been moved into the WebCT online environment. All class assignments are delivered within WebCT, as are self-assessment quizzes. The move into WebCT not only makes the instructional materials available to the students anytime and anywhere they choose to work, but it also forces the students to become facile in their use of the environment. Most faculty provided with a UTAP student desire help with developing courses within WebCT.
UTAP students are assigned to be developers of a hypothetical course, within their academic discipline, for which they create support materials in the form of PowerPoint presentations, web pages, and a WebCT course environment. The materials they develop are expected to demonstrate their skills acquisition and their understanding of design, accessibility, copyright, and usability issues. Grades are assigned based upon their ability to meet an understood level of ability. The difference between an “A” product and a “B” product is more often the degree of innovativeness or creativity incorporated into the effort than the complexity of it.

Who are the UTAP Students?
Course enrollment is limited to sophomores and juniors in the Life Sciences discipline. In its first iteration we provided no filtering for technical proficiency and this caused some difficulties in providing instruction. Some students entered the class ready to create PowerPoint presentations with voice-over and video, while others had difficulty identifying the drives attached to their computers. (It is interesting to note that the University of Maryland does not have a required course that teaches information technology competencies at this time. This leaves students in “non-technical” disciplines to their own devices to attain a basic level of technical proficiency prior to entering the workforce.)

In its second and third years of implementation, we admitted only those students who indicated uniform levels of computer competency (e.g., skills in web searching, word processing, email use, Windows-based file management, etc.) in an online skill assessment. Students are motivated to enroll in the course because they anticipate an opportunity to develop marketable IT skills that they would not otherwise be able to pursue in their academic discipline.

In addition to spending a semester in credit-bearing training, students accepted into the program commit to providing approximately 5-10 hours per week to support faculty, upon the completion of the training course. The trained technology apprentices earn approximately $8.50 per hour and are employed for one-to-three semesters after their completion of the training course.

Who are the Faculty?
UTAP “graduates” are primarily deployed to faculty who teach large lecture courses. Such courses are generally well-served by presentation technologies and many such faculty are turning to WebCT not only to help them manage the administrative aspects of the course, but also to deploy content in a cost-effective way. Faculty just coming to grips with the new ways that they can think about their courses within the context of technology are relieved to have an extra set of hands to do the coding, testing, formatting, and posting of content.

Comments such as

“I really was saved an incredible amount of time by having [my UTAP student]…I am very grateful to have had the opportunity to work with her…” and
“We got a lot done!…We became great friends as a result of the UTAP collaboration…”

are indicative of the overwhelmingly positive response that faculty have had toward the program and the students. Moreover, faculty indicate a gratitude to the program for freeing them to spend
more time on understanding and working with the *pedagogical issues* revolving around instructional transformation, rather than getting bogged down in IT processes.

**UTAP Outcomes**

The word-of-mouth success of two cycles of the program and an article in the University faculty newspaper peaked the interest of several other colleges at the University. The current result is now a combined program between the College of Life Sciences and the College of Agriculture and Natural Resources. During the Spring 2001 semester, we trained twenty new students, equally split between the two college disciplines. Other colleges at the University of Maryland have expressed interest in incorporating a similar program into their curricula, a cross-disciplinary exercise that could be facilitated in future semesters through the use of WebCT.

In addition to proving itself to be a successful and scaleable model for training student instructional technologists, UTAP has promoted increased use of instructional technologies and better teaching and learning situations in College Park classrooms. With the knowledge that they will have access to “free” technical assistance, more faculty than ever before are experimenting with integrating technology into their teaching. The Colleges underwrite the cost of the UTAP student staffing for their faculty; however, faculty demand for assistance still exceeds the available pool of qualified UTAP labor.

Feedback from apprentices and faculty has been uniformly positive. The one-on-one pairing of student and faculty has led to rich mentoring relationships. One student related an unpredicted outcome of the program with the following commentary:

“... the program was very beneficial to me. Not only did it teach me about good web and presentation design, it also got me a job with University Publications and Relations working on some of the campus’s web sites. Finally, it gave me more connections in the Life Sciences [college]. [My faculty partner] was able to help me with issues concerning my major and future career. He was also able to tell me about special programs in Life Sciences, and contacts in the department that I would have never discovered otherwise.”

**Importance to Other Institutions**

A common situation in most institutions is the lack of adequate technical support for faculty. The pressure for faculty to incorporate the web and other technologies into their courses can be overpowering. The result can be an untenable situation for faculty, University administrators, and instructional support staff, alike.

Our experience with UTAP has turned this dilemma completely around. Faculty now are able to hand off much of the tedious work that is associated with web page creation and online class presentations to qualified student employees; students have not only been trained in the requisite technical skills, but also have been exposed to the collegial instructional culture and discipline. This enables faculty to spend more time on content rather than form, within a supportive, trustworthy and mutually respectful climate. In addition College IT support personnel can now focus more on development and discipline-specific applications. Students learn skills that will
make them more marketable when they graduate, and they develop beneficial relationships with faculty who can help them with academic and career issues.
Future

Our vision of UTAP is to see it deployed campus-wide. In order for this to be successful each college in the University will need to designate someone as the UTAP coordinator for their school. This coordinator would be responsible for recruiting students, assisting with training, deploying apprentices and post-course mentoring.

A cost effect method of supplementing faculty support in the classroom is greatly needed. The College of Life Sciences is currently seeking funding agencies to help support the costs of the program.

From the University of Maryland perspective, this program has been a win-win situation, and provides a model that will scale to meet the needs of additional campus constituencies and could easily transfer to other universities and colleges.

Conclusion

Thomas Edison once said that invention [success] is 10% inspiration and 90% perspiration. We believe Edison over estimated the amount of inspiration needed to be successful in supporting technology. The Undergraduate Technology Apprentice Program at the University of Maryland is a simple concept. It requires a lot of work, shows a very successful partnership between the College of Life Sciences and our central IT unit and the benefits and outcomes have made it worth every bit of effort.