

Using Course Syllabi to Determine Amount of Student Exposure to and Use of Technology in Instruction: PT3 Assessment

Berhane Teclehaimanot
University of Toledo

Abstract

During the spring semester 2003, faculty members in the Colleges of Education and Arts & Sciences were asked to submit their fall 2002 semester syllabi that reflect the integration of technology into the courses they teach as a result of attending 12-15 weeks faculty development/training workshops. Furthermore, a survey was designed to extract information as to what extent faculty use technology into their courses and to what extent they require their students to use technology in the classroom. During the 2001-02 academic year, 32 faculty members from the Colleges Education and Arts and Sciences participated the PT3 faculty development implementation grant workshops. The purpose of this study is to share our experiences related to this faculty development effort during the first year.

Background

During the spring semester of 2002, University of Toledo began its first group faculty development/training workshops to prepare faculty to integrate technology into the college classrooms. The main goals and objectives of the project were to enhance student learning simply teaching the use of technology tools to pre-service teachers, and also by modeling the application and integration processes. Preservice teachers must be shown, systematic approach, how to integrate technology and eventually exhibit these same processes them selves. It is this teaching and modeling of best practices that cements a pre-service teacher's commitment to the application and adaptation of technology with the expectation that it will carry over to the classroom of the new teacher.

The integration of technology into college-level teacher education curriculum has become a catchphrase in both higher and K-12 education. Unfortunately, the missing element in this technological innovation seems to be faculty development. While most schools recognize the need for students to master and utilize technology, the missing element in this technological innovation is in the area of faculty development. Although most faculty recognize the integration of technology into the curriculum requires new approaches to the teaching and learning process, not enough consideration is being paid to ensuring that the faculty who are teaching with the new innovative technologies have been adequately trained (Rowe, 1999). In order to facilitate faculty in effectively integrating technology across curriculum in the classroom, the U.S. Department of Education "Preparing Tomorrow's Teachers to Use Technology (PT3) implementation grant projects are playing an essential role in disseminating information to ensure that our future K-12 teachers are technology-wise and can use the multimedia facilities available in today's schools. Ultimately, upon graduation, these future teachers will not only practice their skills in the classroom but will model the effective use of technology to their students. First, faculty development and training must be available and must include the most current technological tools in order to provide an understanding of how to integrate the effective use of technology into the teaching and student learning process.

In spite of the tremendous growth of technology in our nation's schools and the belief by a majority of educators that all students must have access to technology to be truly successful in today's world, there is evidence that many teachers still do not use technology at all in their teaching (Education Week, 1999). According to a national survey (DeMedio & Teclehaimanot, 2001), 90 percent of schools in ten states have Internet access to classroom. In addition, according to a report from the research of the CEO Forum on Education and Technology (2000), 80% of schools in the United States have access to technology, but few teachers are ready to use technology in their classroom activities. The Department of Education Survey found that approximately 33% of teachers believe that they could use technology in their classrooms (National Center for Education Statistics, 2000). A national survey by Backer (1999) supports the finding that majorities of teachers, as many as 70%, are not using the technologies available to them.

Faculty belief and attitude toward technology, fear factors or complexity issues, lack of time and a lack of support, limited access, lack of faculty development training and lack of organizational support have been identified

as major barriers. There are many factors to change, such as lack of computers in the classroom, access to the Internet, updated software and hardware, lack of release time for faculty to learn how to integrate technology into the curriculum. Teachers must be allowed adequate time to learn new technologies (Maney, 1999). While numerous studies have examined the use of technology in the K-12 classrooms, few have taken the focus one step further to determine the extent, to which technology is used and required in the undergraduate teacher education programs. The purpose of this study is to share our experiences related to this faculty development effort during the first year.

Faculty members of the spring 2002 TIPT technology workshops were asked to submit fall 2002 semester syllabi that reflected the integration of technology into their courses as a result of attending these workshops. Of the 30 faculty participants, 20 returned syllabi to date and 5 indicated that they were either not currently teaching the courses they had adapted or they were away on sabbatical. Syllabi from these 5 will be collected in spring 2003 along with those of the fall 2002 participants. Syllabi from the remaining 5 participants are still being solicited.

Design

The rubric used to measure technology use/exposure can be found at the end of this report. Syllabi were rated in two general areas: (1) the faculty member uses and models it and, (2) students themselves are required to use it. Faculty use of a technology tool was given one point for each tool and student use, based upon constructivist educational strategies, was given two points per tool. In addition to specific tools listed, a category entitled “Other” allowed for the tallying of technology not covered by the survey. The use of word processing was not included as it already plays a prominent role in the university classroom (prior to any technology training workshops). Scores could range from 0 to over 30 depending upon the amount of “other” uses listed.

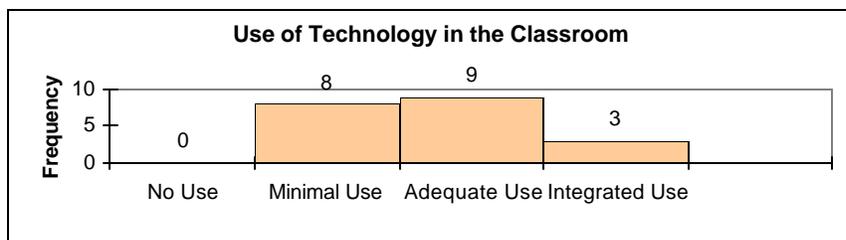
Tallies were then placed in an ordinal scale that ranked the use from “No Use/Exposure to Technology” to “Integrated Use/Exposure”. The actual scale is as follows:

| <i>Category</i> | <i>Range</i> |
|-------------------------|--------------|
| No Use/Exposure | 0 |
| Minimal Use/Exposure | 1 - 7 |
| Adequate Use/Exposure | 8 - 14 |
| Integrated Use/Exposure | 15+ |

Categories are based upon the amount of student exposure that was considered reasonable by the TIPT advisory committee. It was felt that a minimum rating of 15 indicated quite a bit of exposure and use without compromising course integrity due to overuse of technology for the sake of technology itself. No attempt was made, however, at this time to determine the appropriateness of the integration of technology. This issue will be measured spring 2003.

Findings

Overall ratings ranged from 1 to 21. Mean average was 8.85 (adequate use/exposure) with a standard deviation of 4.97. This calculation was based upon the frequency of tools used (interval scale) rather than the ordinal categorization. Frequencies of scores in the ordinal categories are displayed in the graph below:



Frequencies indicate that 12 or 60% of the respondents have already incorporated the use of technology into their course instruction at an adequate level. It is expected that continued professional development, along with the sharing of ideas and strategies among faculty members, would increase this percentage to at least 75%.

In addition to examining overall scores, sub-scores in both the faculty and student use categories were inspected. In this case, one point was assigned on both the faculty use and the student use in order to compare the amount of tools that were incorporated amongst the two groups. Nine tools were listed as well as the “Other” category that was not limited in number. Faculty use ranged from 1 tool to 7 and student use ranged from 0 (3 courses had this rating) to 7. The tools most commonly used by faculty were email (17) and the use of the Internet

for research (11). Student use paralleled faculty use with 16 courses requiring students to use email and 10 requiring students to research on the Internet. Full results are listed in Table 1.

Table 1: *Faculty and Student Use of Technology*

| Tool | Faculty Use | Student Use |
|-----------------------|-------------|-------------|
| Email | 17 | 16 |
| Internet for research | 11 | 10 |
| Web pages and courses | 6 | 6 |
| Multimedia devices | 5 | 1 |
| Presentation software | 5 | 1 |
| Electronic portfolios | 0 | 0 |
| Other | 21 | 22 |

The “Other” category included the following tools:

- Use of listserves
- Video
- Bulletin boards
- Library databases
- Adaptive technologies for visually impaired
- Foreign language teaching forums and labs
- Teleconferencing
- Studying the use of technology in teaching languages
- Live text software
- Digital archives
- Graphing calculator
- Statistical software

Conclusions

After one TIPT workshop series, faculty members have already begun integrating technology into the university classroom. While the most common uses are still the more traditional tools (email and internet), many participants have reported using technology in creative ways to enhance the teaching/learning experience. It is recommended that future workshops place more emphasis upon and assistance in the application of other technology tools to enhance instruction (when appropriate). A fine line has to be drawn between using technology to enhance instruction and using technology simply for its own sake. Electronic portfolios were not reported as being used. However, the College of Education’s Technology Task Force is currently working on developing guidelines for electronic portfolios and their integration into college capstone courses. These guidelines should be available spring 2003.

Findings should be viewed with caution as the rating scale was determined somewhat arbitrarily and the quality or appropriateness of the use of technology was not recorded. It is encouraging, however, that many faculty participants are already making use of the knowledge gained through the TIPT workshops. This first assessment will serve as a baseline from which progress can be gauged.

TIPT Infusion of Technology into the Curriculum Scoring Rubric

This rubric is to be used to evaluate course syllabi. When the syllabi do not indicate the extent to which technology has been incorporated into the course, faculty comments will be solicited.

College/department of course: _____

| Technology Tool | Faculty Uses It (1 pt.) | Students Use It (2 pts.) |
|-----------------------------|-------------------------|--------------------------|
| E-mail | | |
| Internet research | | |
| Web-based course | | |
| Multi-media (cameras, etc.) | | |

| | | |
|-------------------------------------|--|--|
| Teaching tools (grades books, etc.) | | |
| Presentation software | | |
| E-portfolio | | |
| Tutorials | | |
| Concept mapping | | |
| Other (list below) | | |
| Total per column: | | |

Total score: _____

Please list other uses not mentioned in the rubric:

References

- Apple Classroom of Tomorrow. (1995). *Changing the conversation about teaching, learning & technology: A report on 10 years of ACOT research*. Cupertino, CA: Apple.
- Becker, H.J. (1999, January). *The sampling of technology-supported reform programs, participation school sites, and the sampling of his-end technology-present schools in the national survey*. *Teaching, Learning and Computing 1998*. Unpublished paper presented to P*SITES advisory meeting. SRI Menlo Park, CA.
- CEO Forum on Education and Technology. (1999). *Schools Technology and readiness report year 2*. Washington DC
- DeMedio, D.L., & Teclehaimanot. B. (2001). What types of technology do middle school teachers really Use? *Michigan Middle School Journal*, 26 (1).
- Education Week. (1998, Oct. 1). Technology Counts '98 [Special issue]. *Education Week*. 28 (5).
- Hinkle, D., Wiersma, W., & Jurs, S. (2000). *Applied statistics for the behavioral sciences* (4th ed.). Boston: Houghton Mifflin.
- International Society for Technology in Education. (1997). *Curriculum Guidelines for accreditation of educational Computing and Technology Programs*. Eugene, OR. <http://www.iste.org>
- Maney, J. K. (1999). The role of technology in the systemic reform of education: Reality, pitfalls, and potential. In G. Cizek (Ed.), *The handbook of educational policy* (pp. 387-415). San Diego, CA: The Academic Press.
- Scriven, M. (2000). "The logic and methodology of checklists". Retrieved March 4, 2002 from http://www.wmich.edu/evalctr/checklists/logic_methodology.htm
- U.S. Department of Education, National Center for Education Statistics. (2000). *Teachers' tools for the 21st century: A report on teachers' use of technology*. Washington, DC. U.S. Government Printing Office.