FACULTY TRAINING AND UTILIZATION OF TECHNOLOGY IN PRESERVICE EDUCATION

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Findings from an Office of Technology Assessment (OTA) Report, *Teachers and Technology: Making the Connection* (1995) listed several barriers that might be encountered in efforts to integrate technology at the higher education level. A key barrier sited was the minimal professional development opportunities that are often available for faculty in institutions trying to integrate technology. Faculty training needs range from basic operation and concepts to integration, i.e: lesson development, implementation and assessment strategies. Lack of time to redesign courses to integrate technology and persisting academic responsibilities such as research, service, and publication are also listed as significant barriers. Depending on how broad the definition of scholarly activity at a university, technology integration and associated training may or may not be included. A faculty member desiring promotion and tenure will understandably opt to spend time on activities that will fulfill promotion and tenure objectives.

In our program at Boise State University, we wanted faculty to feel their time was valued and at the same time meet national and state technology goals. In exchange for a faculty member's active participation in our project for one semester, we addressed each barrier cited by OTA (1995) for faculty members participating in the project. To address the lack of funds for equipment, a new computer was provided for each faculty member participating in the project. To address the lack of professional development opportunities, an intensive faculty training program was implemented involving in-and-out of the classroom technology integration support for participating faculty. To address the time barrier, each faculty member participating in the active semester of training received a payment equivalent to the payment made to faculty members assuming an overload in coursework.

It was felt that by making a concerted effort to pay the faculty for their time, they would see the time they invested on the project as time well spent. Upon request, we provide documentation of a faculty member's participation in the program for the promotion and tenure committee. In addition, we work directly with promotion and tenure committees to ensure that these committees have a complete understanding of our project, its initiatives, and its relevance to national and state standards.

The need for advanced faculty training in technology led project coordinators and staff in search of a curriculum on which to base the training. It was determined that the ISTE Foundational Standards for All Teachers (1999) would be used. The ISTE Standards were chosen for two reasons: 1) Practitioners in P-12 and higher education recognize these standards on an international level, and 2) NCATE collaborated with ISTE to determine the role of technology in teacher education when designing their Professional Standards document (2000).

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The ISTE standards are broken into six general categories summarized below:

- Technology operations and concepts
- Planning and designing learning environments and experiences
- Teaching, learning and the curriculum
- Assessment and evaluation
- Productivity and professional practice
- Social, ethical, legal, and human issues

Designed to meet these basic competencies and standards and to allow opportunity for individual exploration of areas of interest by faculty, the training was divided into two parts. First, all participating faculty completed a whole-group 36-hour session spanning two weeks at the beginning of the semester. In this session, trainers addressed ISTE standards and technology competencies, as well as integration of technology into teaching and learning.

The second training component, 14 hours total, was individualized for each faculty member, allowing them to focus on their own areas of interest. Faculty scheduled and completed the additional training throughout the remainder of the semester. These opportunities for training included: weekly workshops, one-on-one training, fieldtrips to K-12 technology-supported classrooms, and an opportunity to attend the National Consortium for Computing in Education (NCCE) conference. It was typical for faculty to exceed the 14 hours required for individualized instruction. At the end of the active semester of participation, faculty members were required to submit four technology-supported lesson plans, one of which had to be implemented during the same semester. Project staff also hosted a culmination meeting for faculty at which they shared their technology integration experiences of the semester and their plans for future integration.

Subsequent to completion of the training sequence, the 20 professors taking part in the program were asked to complete a survey which addressed their utilization of technology in their classrooms as well as their satisfaction with technology use. This survey reflects responses in the first course taught by these professors upon completion of the training sequence. Table 1 presents frequency of selection of computer uses. The respondents were asked to check all that applied to their course.

These data indicate that the most frequent usage of technology by these technology-trained professors involve general communication and visual displays. Most of them used presentation software (PowerPoint) in their classrooms. The least frequent uses involved more sophisticated uses of technology requiring higher levels of technology skills. It is be expected that these more advanced uses would increase as professors gain more experience and develop more advanced skills.

Table 1. Frequency of selection of technology uses.

Technology Use	Freq.	% of Total
to communicate information	17	10.0
to plan, draft, proofread, revise, and/or publish written text	16	9.4
to deliver instruction	15	8.8
to organize and store information	14	8.2
to create visual displays of data/information (graphs, charts, etc.)	13	7.6
to create graphics or visuals of non-data products (diagrams, pictures, figures)	13	7.6
to communicate with others	13	7.6
to facilitate understanding of a concept	13	7.6
to create visual presentations	12	7.1
to gather information from a variety of sources	12	7.1
to perform calculations	9	5.3
to manipulate/analyze/interpret data	8	4.7
to collect data and perform measurements	4	2.4
to support individualized learning	4	2.4
to create models or simulations	3	1.8
to compensate for a disability or limitation	3	1.8
to remediate for basic skills	1	0.6
Total	170	100

Participants also were asked to respond to eight questions concerning general satisfaction with use of technology in their classrooms. Overall, the respondents indicated they would like to increase the use of technology in their classes and would like to see more resources become available for their use.

In conclusion this technology training program has been successful. The graduates of the program are positive toward the use of technology in the classroom and provide good models for preservice teachers in our program.

References

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