

## MAKING IT HAPPEN FOR PRE-SERVICE TEACHERS: TWO DELIVERY METHODS OF TECHNOLOGY LITERACY

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### MUSIC EDUCATION

While examples of technology applications abound, “only a few music departments in colleges and universities seem prepared to provide their music majors with adequate training in computer literacy” (Deal & Taylor, 1997, p.17). The National Association of Schools of Music (NASM) accreditation agency has a standard common to all baccalaureate degrees in music that is nebulous in its intent:

*Technology: Through study and laboratory experience, students should be made familiar with the capabilities of technology as they relate to composition, performance, analysis, teaching, and research (NASM, p. 73).*

However, the definition of technology is determined locally, with approval based upon decisions of visiting evaluators and by the NASM review commission. There are no proposed curricula nor is there a blueprint for achieving these goals. Thus, many schools are left wondering where to begin and how to organize an ever-expanding list of technology competencies.

Several issues must be considered when deciding the best method for technology literacy instruction. First, many degree programs are limited by the number of credits they can require for graduation. Some programs are being “down-sized” in order to meet the initiatives in several states to reach 120 credits per degree. Many universities cannot afford to add a separate class for technology within the specialty. Many of Deal and Taylor’s (1997) survey respondents of 10 large higher education institutions offered a separate course in computer fundamentals for musicians. Only one respondent suggested that this choice may “absolve” faculty from “having to learn” technology for integration purposes. However, most felt that a separate course was the better solution for several reasons. First, without an overall plan, significant gaps or needless overlap of instruction may occur. Second, NASM reviewers may find piecemeal, haphazard application of technology unacceptable. Third, faculty may find it difficult to stay abreast of current technologies such that they can effectively apply technology in their courses. Another problem may be that the content and time commitments of music courses are already intense without having to learn computer skills simultaneously.

Survey respondents also felt that music technology should be taught in the music department—whether integrated into current curricula or as a separate course. Many universities are finding compromises, such as Florida State University, whose music school agreed to teach the basic university-required components of computer literacy within the music technology course, meeting two requirements within a single course. Therefore, every student who graduates as a music major or minor must take this course, which will be described in

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greater detail below. With the creation of Master's programs in music technology by several highly recognized music schools, such as Peabody Conservatory of the Johns Hopkins University and Indiana University Purdue University Indianapolis (IUPUI), the emerging philosophy is that music technology is a genre unique unto itself. IUPUI states "the primary objective of the program is to bring new and emerging digital arts technologies to students as they relate to a new discipline defined as music technology."

Florida State University's School of Music used the credit-sharing approach by adding a one-credit required course to be taken any time within the undergraduate program, though within the first year is highly recommended. The model includes integration beyond the one-course requirement as well. The model calls for a technology "expert" to teach the class and to assist faculty with courses and workshops in a laboratory setting. The curriculum is sectioned into four main areas. The first two sections contain university-required components. The first is basic computer skills and terminology, word processing, email, Internet searching, and basic hardware setup. The second area of evaluation and presentation is integrated into an application-based learning project in which the students evaluate music software and use PowerPoint to communicate their findings with the class in an oral presentation. The following sections are music-specific, learning the tools that they can apply to other areas of their programs. Threaded throughout the semester is a digital portfolio project in which the students create a web page that contains links to all their projects, evaluations, and any other pertinent information they wish to include (Hagen, 2001).

#### ELEMENTARY EDUCATION

Valley City State University has adopted an integrated technology strategy throughout its curriculum. Based on the strategies Ehrmann (1995) suggested VCSU approached the complex problem of technology integration with his perspective:

1. Technology often enables important changes in curriculum, even when it has no curricular content itself.
2. What matters most are the educational strategies for using technology, strategies that can influence the student's total course of study.
3. If such strategies emerge from independent choices made by faculty members and students, the cumulative effect can be significant and yet still remain invisible.

To assess changes in learning a university must study its educational strategies for using technologies. It is not possible to measure these strategies in a single course but it must be done across the institution or division if the evolution of the strategies is to be monitored. (p. 25)

Other educators including Steve Gilbert (1996) support this perspective and suggest it is necessary to have a density of technology use before changes in learning can be appropriately measured. Gilbert states, "To make visible improvements in learning outcomes using technology, use that technology to enable large-scale changes in the methods and resources of learning." To enable such large-scale change, nearly every course at VCSU is enhanced by a project that is based on one of the eight University Abilities (Corwin 2000); most projects involve technology. Every academic division has selected the particular Abilities its students will demonstrate with high proficiency and use to focus their senior digital portfolios.

The faculty from the Division of Education embraced this integration through project-based technology application in all of their courses. Thus the technology became imbedded in content knowledge as students applied it in authentic settings. A mapping process has been completed to determine which Abilities and what type of technology is integrated into the core courses of the Elementary major.

A student survey constructed by a member of the Division of Education is designed to obtain information related to learner centered education and the effective use of various instructional technologies. Results indicate positive perceptions from the students concerning the learner-centered use of technology at VCSU. Education faculty have only begun to explore the potential of outcome-based formative assessment using the Ability projects. The Senior Portfolios offer a summative assessment measure.

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