Self-Directed Learning Program and the library: supporting instructors in development of multimedia instructional programs

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INTRODUCTION

For both instructors and students, the epitome of computer-based instruction is a program that presents exactly the information that the instructor wants students to know. The program is interactive, self-paced, self-directed, and, unlike the instructor, never distracted or too tired or in too much of a hurry. The program may be a tutorial, a self-assessment quiz, a presentation of cases, or an exam. Students may use the program individually, with a study partner, or with a small group. The instructor may work with students using the program in the lecture hall setting or in a problem-based learning setting. But, most importantly, the information presented is the right information.

Advances in technology and software, together with a heightened appreciation of self-directed learning, have fostered interest among busy instructors in the development of computer-based multimedia instructional programs. Instructors want to incorporate their own slides and teaching materials into self-instructional programs. They often want to work personally on the program but have limited time and expertise and must rely heavily on support units of which they know very little. If these instructors can be prepared to participate actively in the development process, and the support units, such as the library, computing department, media production services, and educational development office, can work as a team to assist instructors through the process, then the number of programs developed and their relevance to the curriculum can be increased.

A unified support team

Perhaps the most important factor in successful program development by instructors is a unified team effort by support units. Together, the support units must define the function of each unit in this collaborative effort. They must agree on the point of “hand-off,” that is, the point when one support unit makes arrangements for the instructor to be advised by one of the other support units. This point may change depending on the expertise of the instructor, the type of program being developed, and the resources available. But this point must be clear and acceptable to the supporting personnel. The units must coordinate their actions so support is continuous and fluid. This is the responsibility of the support team and should not be a question of concern for the instructor.

Technological advances in authoring

Authoring tools such as Authorware have made it possible for instructors to work with support personnel to learn rapidly how to put their own content into templates or create a new template. Software companies welcome cooperative relationships with developers and provide easy ways to use their resources to develop programs. Hardware prices have fallen precipitously, so a library realistically can support instructor workstations dedicated to program development with state-of-the-art peripherals and authoring software. Networking advances allow the use of centralized resources and sharing of programs and image databases.

THE SELF-DIRECTED LEARNING PROGRAM

In 1991, the College of Medicine at the University of Arkansas for Medical Sciences (UAMS) formed the Self-Directed Learning Program Committee to provide substantive support of instructors in development of computer-based instruction projects using images. The committee includes instructors, administrators, and representatives of support services, including the library, media services, computing services, and educational development branches. The committee makeup fosters both “top-down” and “grassroots, bottom-up” management approaches and keeps information flowing in both directions.

The committee identified a number of needed resources, including the following:
- personnel with expertise in all aspects of educational technology;
- computer workstations complete with appropriate development and imaging software that may be shared by instructors working on instructional modules;
- a common, shared database of digitized images, sounds, and videodisc sequences;
- a bank of courseware templates to speed development;
- hardware and staff resources for digitizing images and creating graphics;
- training and assistance in the use of authoring packages and templates; and
Networking capabilities that would allow wide accessibility.

Personnel with the requisite expertise already were in place in the various support units on campus. Thus far, human resources have been given freely by the support units, and no additional staffing has been required. The College of Medicine assisted these units by purchasing substantial amounts of hardware and software. After the first year of planning and testing, the Self-Directed Learning Program was opened to all colleges at UAMS.

Guiding principles

The individuals appointed to the committee have very diverse interests and skills, but each committee meeting brought the members closer to defining a set of principles for their work that all could agree upon. The following principles focus on removing traditional roadblocks that have prevented many interested instructors from attempting to develop computer-based instruction modules.

Obtain recognition for development of instructional computer-based programs in promotion and tenure considerations. The dean of the College of Medicine wholeheartedly supports the granting of such credit, but judgments about the importance of these development efforts is largely in the hands of department chairs. The instructor is urged to work out credit arrangements with the department chair early in the process.

Focus on process and resources, not on specific technologies. Effort is directed at establishing and maintaining a cooperative setting independent of a particular technology employed at any specific time. The committee makes purchasing decisions based on the most appropriate, cost-effective, stable options at that moment.

Focus on cross-platform (Macintosh, Windows, interactive CD-ROM, CD-I, Mosaic, client/server) development. Initially, cross-platform meant Macintosh and IBM personal computers, but now the committee also discusses CD-I presentation, client/server technology, and Mosaic and hypertext mark-up language (HTML).

Offer personal guidance through the process. A project facilitator, a College of Medicine instructor with experience in developing instructional modules, leads instructors through the process of program development.

Provide hardware and software resources in the library. The library maintains two development workstations (one PC, one Macintosh) with appropriate software and a network connection to the digitized image database, which is maintained by library personnel.

Minimize time and training needed. Easy-to-use templates to facilitate the incorporation of text, images, and self-assessment components are available on the workstations in the library. Support unit personnel who are experienced with authoring programs help the instructors or their assistants set up the program and teach them how to input the information. Often instructors have students or research assistants enter information.

UAMS is not unique and does not stand alone. The committee is interested in sharing programs and expertise with other academic health centers. The committee diligently watches for new developments and standards and tries to stay in the "mainstream."

How the committee functions

An instructor interested in developing a program completes a form, providing information on the topic of the module, the project director, the proposed audience, and the level of computing expertise the instructor brings to the project. The committee then meets with the instructor—not to approve or disapprove but to learn more. At a minimum, the committee offers suggestions and, if the proposed project does not fall within the purview of the committee, directs the instructor to the appropriate unit on campus. The appropriate support units and the instructor then develop a plan of action and work as a team to carry the project to completion.

Although the committee does not control any funds at present, it identifies possible sources of funding and directs individual developers to those sources. Minigrants are being considered, as well as the possibility of using medical students to assist in development in the summer.

The role of the library

The library representative assists instructors in assessing curricular needs, resources, and implementation requirements and takes an active role in planning, development, and presentation of completed programs. Because the library is ultimately responsible for the use of a program by students, it must participate in decisions concerning what hardware and peripherals will be needed to implement the program.

The library representative diligently monitors technological developments and provides information to the committee. The library representative is in an excellent position to know of the other indi-
Publicity includes articles in Services use promotional brochure A tors. A weekly informal informational meeting called “Friday-at-Noon” is a vehicle for encouraging instructors to present their programs to others interested in educational technology and to share their experiences.

Evaluation

The project facilitator logs any requests for information. The development process is recorded and evaluated for each project so that problems can be eliminated or minimized.

CONCLUSION

We learned that instructors do not want a second career; they just want to develop a few programs for their students. Access to a development workstation with all the necessary tools installed, paid for, and kept up-to-date by someone else, is sufficient for most instructor-developers.

The library plays a vital role in a cooperative team effort at UAMS to promote the development of computer-based instruction programs by instructors. The role of the library in such programs will vary at other institutions, but, in the UAMS Self-Directed Learning Program, the library provides state-of-the-art development workstations, manages an image database, shares resources across its network, implements the finished product with students, engages in cooperative planning for future hardware and software needs, and much more. The mission of the program and the library is to encourage and support instructors in development of computer-based instructional projects.

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Ariel: technology as a tool for cooperation

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INTRODUCTION

The effective use of resources in an era of decreased budgets and ever-escalating serials costs has become one of the major challenges facing library administrators. In light of this situation, librarians from the Life Sciences Library and the George T. Harrell Library (College of Medicine) of the Pennsylvania State University embarked on a pilot project aimed at re-

**Table 1**

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† Journal canceled since January 1993.