

Issue III

In a Climate of Change: The Promise and Reality of Uses of Instructional Technology

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INTRODUCTION

The concept of instructional technology is not a new one. In fact, educators who have instructed students from primary to post-graduate levels have incorporated technology for many years. Historically, this technology has included equipment such as filmstrips, reel to reel movies, audio tapes and more recently, videotapes. The advent of the computer age coupled with the birth of the Internet, however, has drastically changed technology as a supplement to instruction. The instructional technology of today can incorporate online computer presentation with visits to locations worldwide, all of which can easily take place during a 50-minute lecture.

The explosion of the Internet and world wide web (WWW) has also altered the applications for utilization of instructional technology. Today, technology is not only used as a supplement to the classroom, but also as a medium for distance learning. Along with these applications, which are incorporated into our training programs, comes the responsibility for training our students in their use. These technologies are not isolated to the university environment but will play a large role in the job opportunities faced by our students.

DISTANCE LEARNING

Distance learning is the opportunity for students who are physically, geographically and/or temporally constrained, to attend classes in an asynchronous environment. An asynchronous learning environment is one that can take place at any time, anywhere. Such an opportunity accommodates work schedules, child care schedules and limits geographic barriers. Of course the extent to which this flexibility is demonstrated is highly dependent upon the technology incorporated. For instance, if videotape is the medium of choice for an academic course, then the student can watch lectures, complete assignments and correspond with the instructor and other students within any time frame. On the other hand, if the course incorporates interactive video-conferencing, then the student is constrained by when and where the course is offered. At any rate, the technology of today offers real flexibility for students who, ten years ago, would have had no options for pursuing an advanced degree. An exciting option for distance learning today is Internet based instruction. Internet-based instruction is the topic we will be discussing as a medium for both for resident and nonresident students.

SUPPLEMENTING CLASSROOM INSTRUCTION

The instructional technology available today has revolutionized the method through which information can be shared in the classroom. With lecture notes that are prepared in advance and posted on

the WWW, students can review the information prior to class time and streamline their note taking during lecture. With a portion of the note taking burden lifted, students are more interactive in class and, when it comes to exam time, more focused on the information that is deemed important by the instructor. The pace of instruction is also more comfortable when students have lecture notes. The pauses that faculty must incorporate to stop and let students catch up, spell a term, and/or repeat information are all but eliminated.

Easy access to email has also changed the way students and faculty interact. This medium is relatively non-threatening as a method for posing questions to the instructor. Students can take the time to formulate questions outside of class, and the instructor has the opportunity to take time to prepare a response. Through email, interaction can also extend beyond this classic didactic interaction to include students from the entire class.

Listserves or discussion groups through e-mail have increased the potential for collaborative learning. Students can pose questions to one another and answer them without direct interaction from the course instructor. Through monitoring these questions and answers, faculty can clarify any points that may have been misinterpreted. Students can learn from each other, and more than one student can benefit from a single response eliminating the question that is asked a thousand times.

The WWW is an instructional tool that has endless application in the classroom. In a class designed to train students in voice disorders students can hear about laryngeal pathology, and then through the Internet, go directly to a site that contains laryngeal images depicting various pathologic conditions. For those of us whose laboratories do not include endoscopy, this is the next best thing. Examples of this application exist across the many variations that our discipline takes, from language samples to MRI brain images. It is just a hot link away.

ACADEMIC BENEFITS

Academic benefits of incorporating instructional technology into our training programs are extensive. Incorporating the WWW into course work can ease frustration for students both during in class and when reviewing material outside the classroom. In addition, classroom demonstrations such as those just outlined can better prepare our students with “real” world application. Experiences beyond the boundaries of individual universities also exist through technology. Universities can share information that would be otherwise unavailable. For example, rural regions of the country would benefit from sharing the case studies of diversity rich metropolitan areas, thus, exposing students to a wide variety of client/patient populations. Another example of collaboration would be sharing a listserv between courses from two or more universities. Students taking the same or similar courses could gain different perspectives from students/instructors from another location in the country. Finally, incorporating technology in the classroom serves as an example for students to adopt such applications in their own studies and/or employment agencies.

FACULTY BENEFITS

Many of the benefits that exist for students also benefit faculty. Faculty members benefit from the one-on-one interaction of e-mail, as well as the electronic classroom discussion. They also benefit from sharing resources within or across universities. These resources may take the form of case studies/examples as mentioned, or research data. Additional benefits are found in the flexibility of instructional technology. If lectures are presented online, there is the ability to clarify points in the notes that may be confusing. This can be done even during class. In addition, the lecture can be updated with new information even minutes before class.

COPYRIGHT ISSUES

We feel this presentation would not be complete without discussing issues of copyright. The Internet offers a valuable tool for sharing information. However, individuals must abide by copyright law when considering the information to post. According to the university attorney for Southwest Missouri

State University, material that carries copyright cannot be posted on the Internet. It *can* be posted, however, if it falls within the "fair use guidelines" for classroom instruction and is posted on courseware that creates an intranet situation. An intranet is an electronic network that functions on a smaller scale than the Internet. Individuals on this network can access information posted on the intranet if they are on user list and have their own personal password.

INTRANET SOFTWARE PACKAGES (COURSEWARE)

Intranet courseware offers several benefits for instructional use of technology. We will be discussing Top Class, the courseware package we use at SMS, to illustrate some of the unique features associated with intranet packages. One of the most useful aspects of Top Class is that class rolls can be entered and students given passwords. This type of access does not require additional server software (other than a browser) or even an email account, so any student with access to the WWW can participate in the course activities. Another nice aspect of this feature is that faculty can post their lecture notes privately. That is, the notes can be viewed by their students but not by anyone else who happens to use the WWW. Restricted access may make faculty more comfortable with posting their lecture notes.

Top Class allows faculty and students to send each other messages, much like an email system. Again, the advantage is that the students do not need to have a specialized account, but rather they are assigned a log-in number associated with the course. Faculty can also post announcements for the class. This can be particularly helpful when schedules vary, exams need to be changed or assignments need to be added or deleted.

Faculty can establish discussion topics by posting questions to which students respond. We have found it helpful initially to require the students to participate. Although responses may need to be coerced in the beginning, they increase as students gain experience and see the value of the activities.

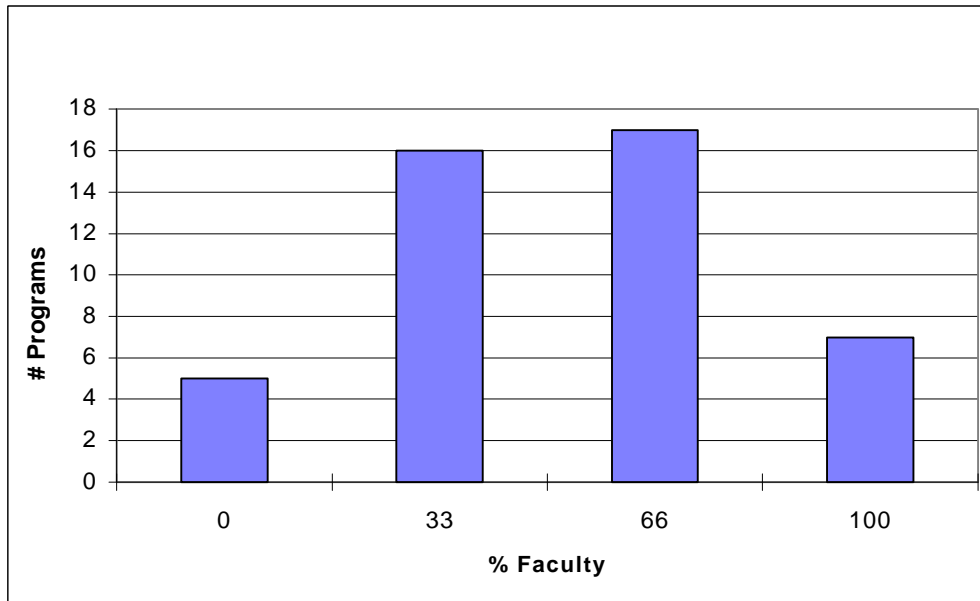
Perhaps the greatest benefit of Top Class is the feature that allows faculty to post quizzes or exams. Students take the quiz on-line, it is automatically graded, and the results are sent to the instructor. This option is great for students. They can take the quizzes at times that are convenient for them and as often as necessary in order to meet the grading criterion. The feature is also nice for the instructor. Class time does not need to be used for administering the quizzes and grading time is minimal. Consequently, instructors may be able to have students demonstrate competencies on a wider variety of skills. We do need to acknowledge that the initial construction and posting of an exam can be somewhat tedious and time-consuming. Our experience so far indicates that it is well worth it.

Top Class is published by WBT Systems and information can be obtained at their website, <http://www.wbt systems.com>. We do want to emphasize that there are other courseware packages available. We have discussed Top Class because it is the one we use, not because we have done research and concluded it is the best.

CURRENT USES OF INSTRUCTIONAL TECHNOLOGY IN CSD PROGRAMS

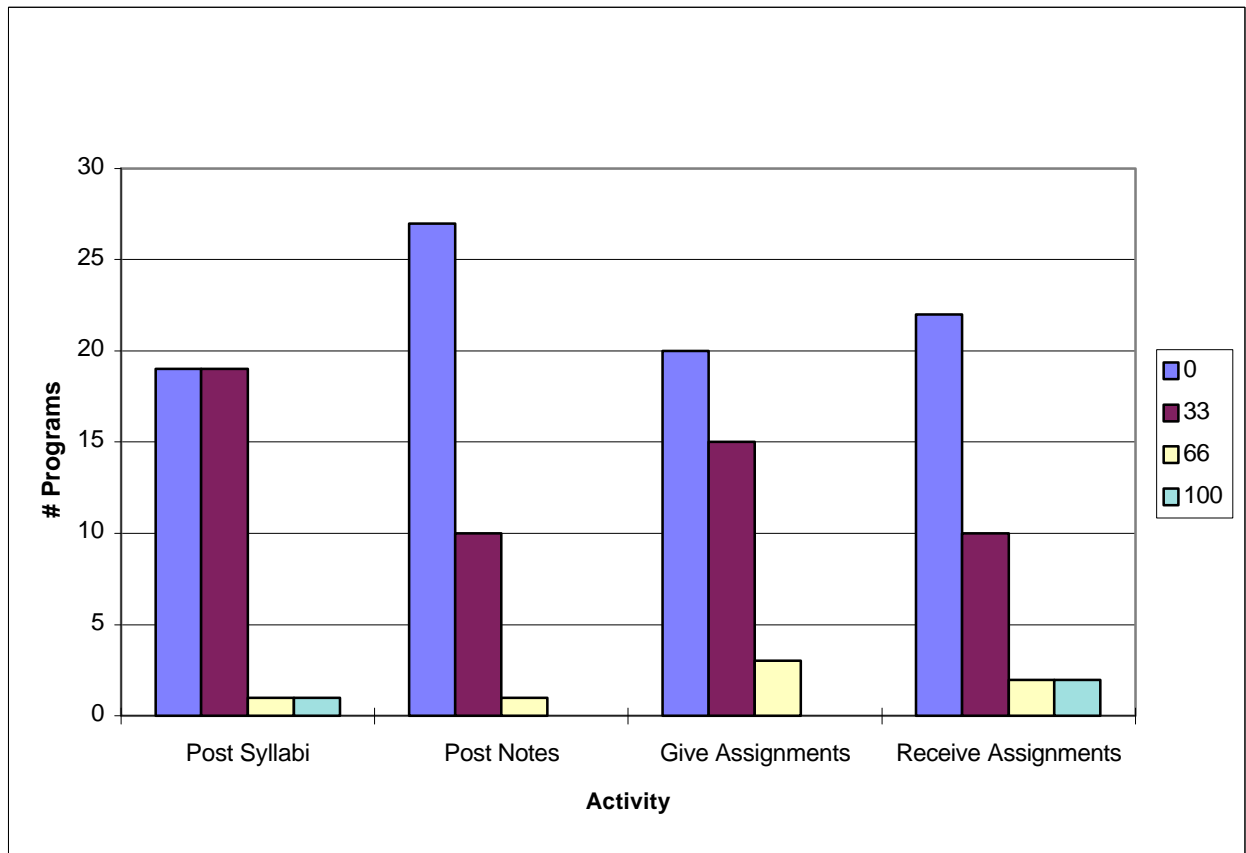
During the month of March 1998, a questionnaire regarding the use of instructional technology was posted for council members (www.smsu.edu/faculty/jas/gcouncil). What follows are graphic representations of the results obtained from the forty-five programs that responded to that survey.

Presentation Software



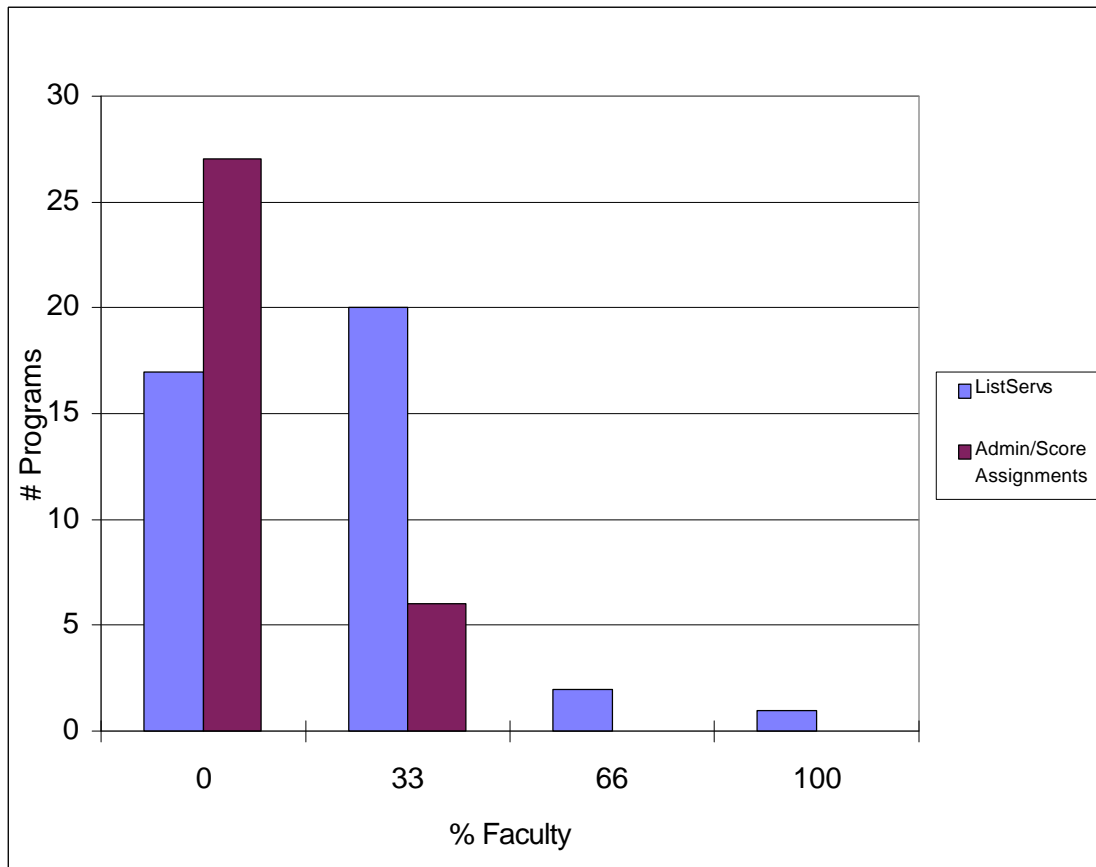
Most programs reported between 33% and 66% of the faculty use presentation software. Fewer programs indicated that none or all faculty use this tool. PowerPoint was used by most people. Lectures that have been developed in PowerPoint can only be projected if sufficient hardware is available. Most programs reported having at least one portable projection unit available to their department. Several programs still have no access to a classroom equipped with permanent projection equipment.

Use of the Internet for Course work



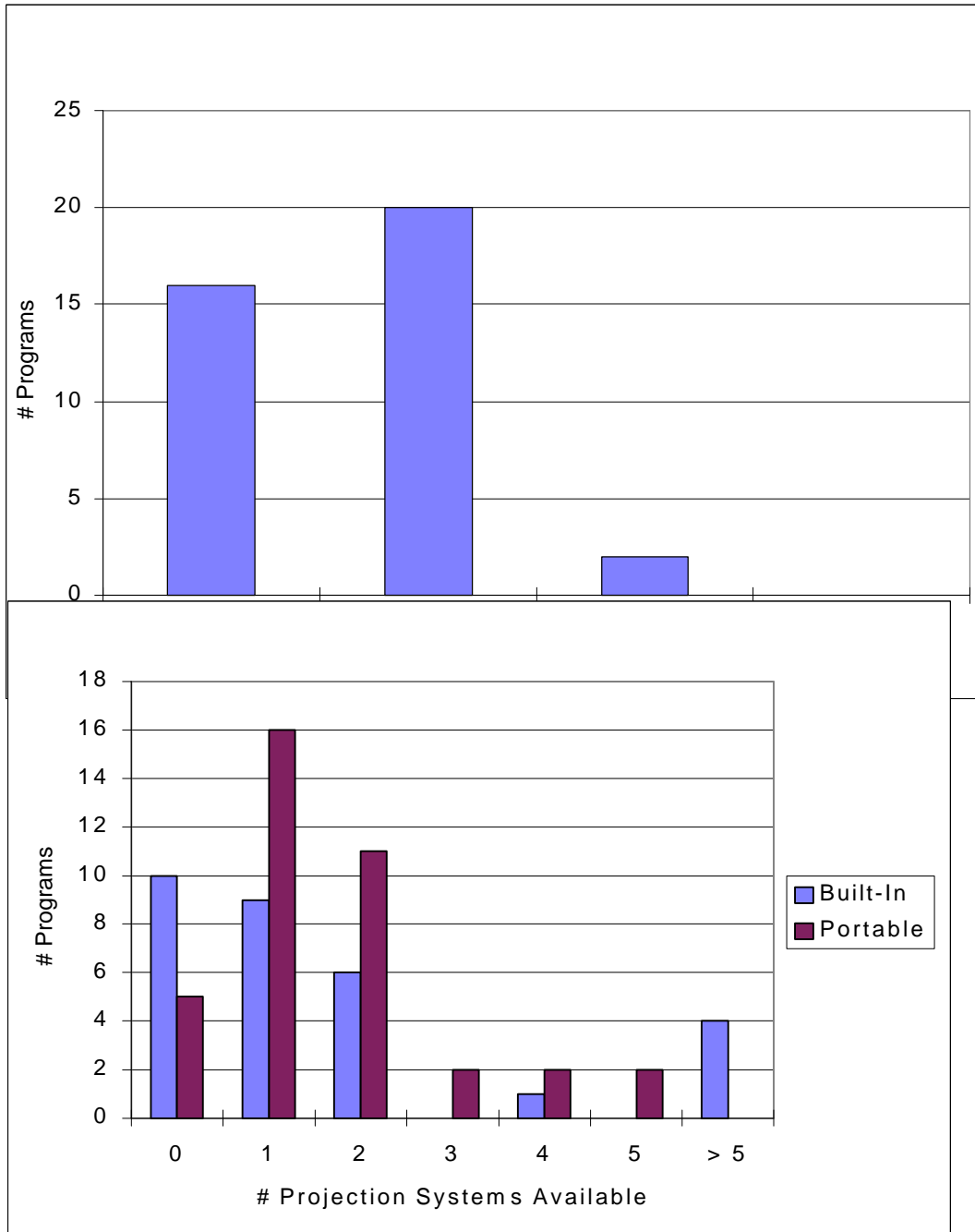
Programs were surveyed regarding the use of the Internet for coursework. In most cases, programs that did report use indicated about 1/3 of the faculty were involved. About half of the programs indicated use of the Internet to post course syllabi; slightly fewer gave or received assignments via the Internet. Twelve programs indicated that some faculty post lecture notes.

Internet Specific Tools



About half of the programs reported faculty use of listservs for students enrolled in their classes. The percentage of faculty that employ this tool is still small (most programs report about 1/3). Specialized courseware that allows faculty to administer and score student assignments is used only in a few programs, and, once again, the percentage of faculty in these programs using this type of tool is small.

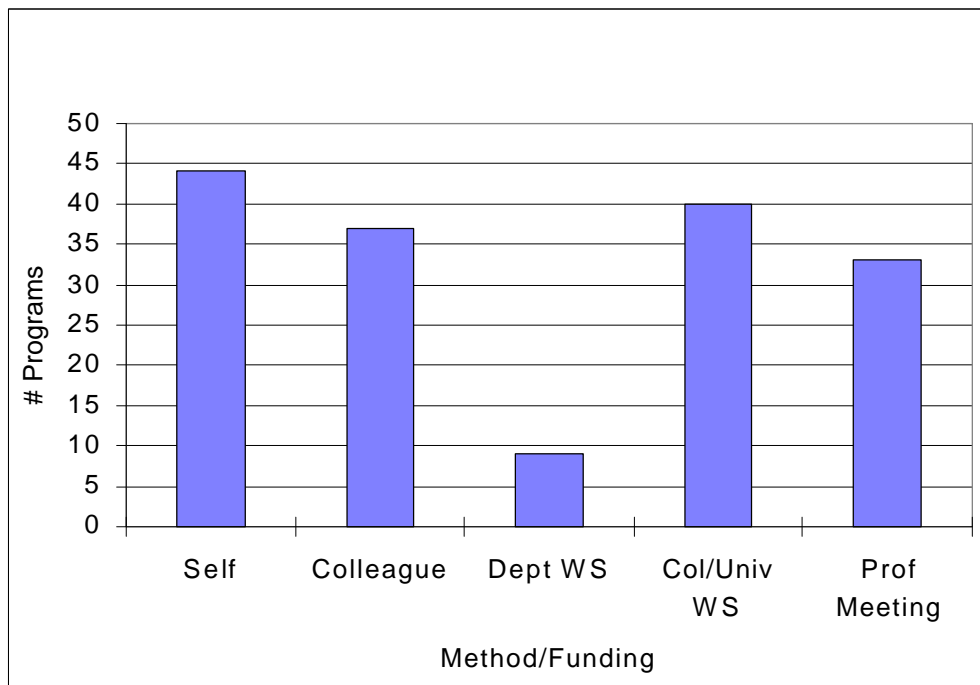
WWW in Class



About half of the programs indicated that at least some faculty were visiting websites during class presentations. Use of the WWW during lectures is likely affected by the availability of classrooms that are equipped for access. Most programs indicated access to at least one classroom that was wired to the WWW. However, few of these were

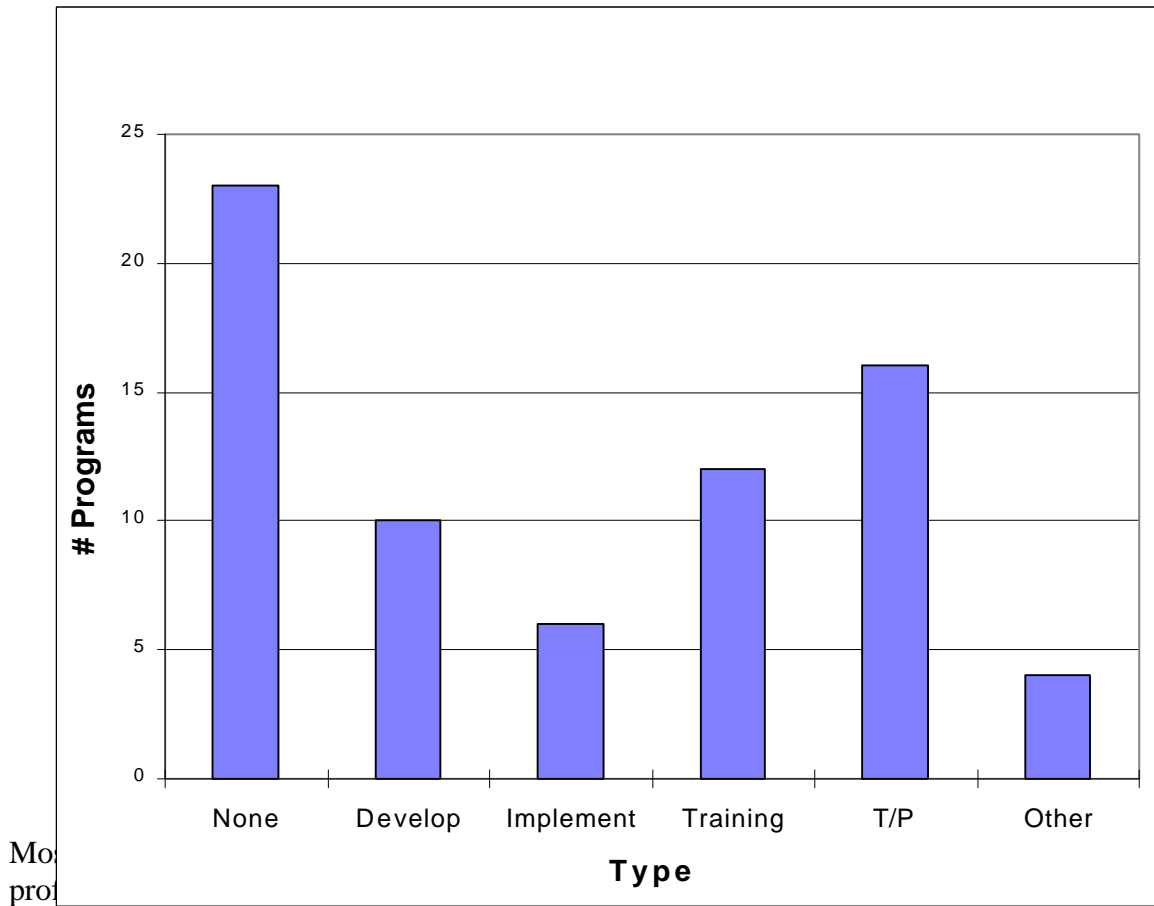
designated as departmental, so perhaps access could be limited if heavy demands were present in the college.

Faculty Training



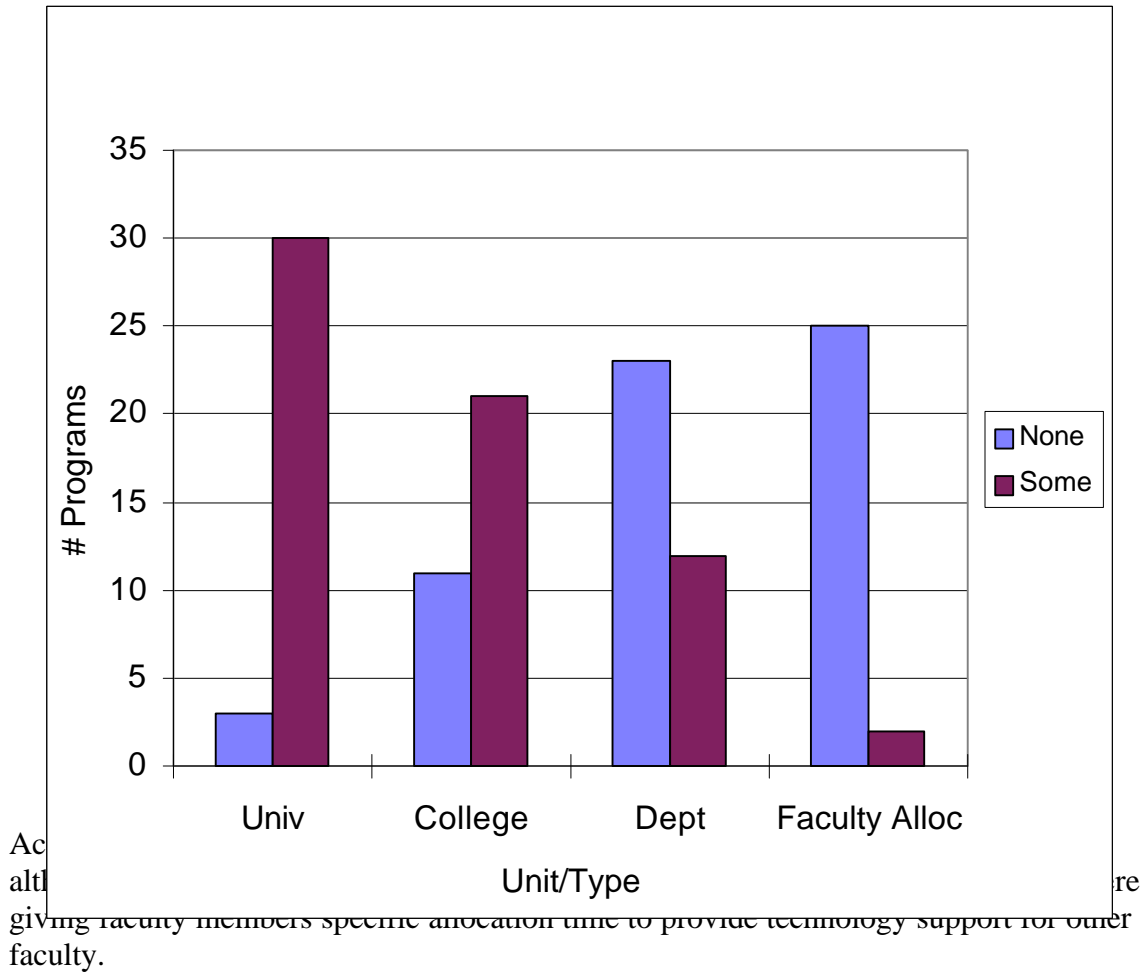
Every program reported that their faculty engage in self-instruction to learn about instructional technology. Most reported that faculty often call on colleagues for input and instruction as well. Most programs reported that their faculty have attended workshops sponsored by the college or university to gain knowledge regarding instructional technology. Several faculty have also attended sessions at professional meetings, such as ASHA and state conventions.

Incentives

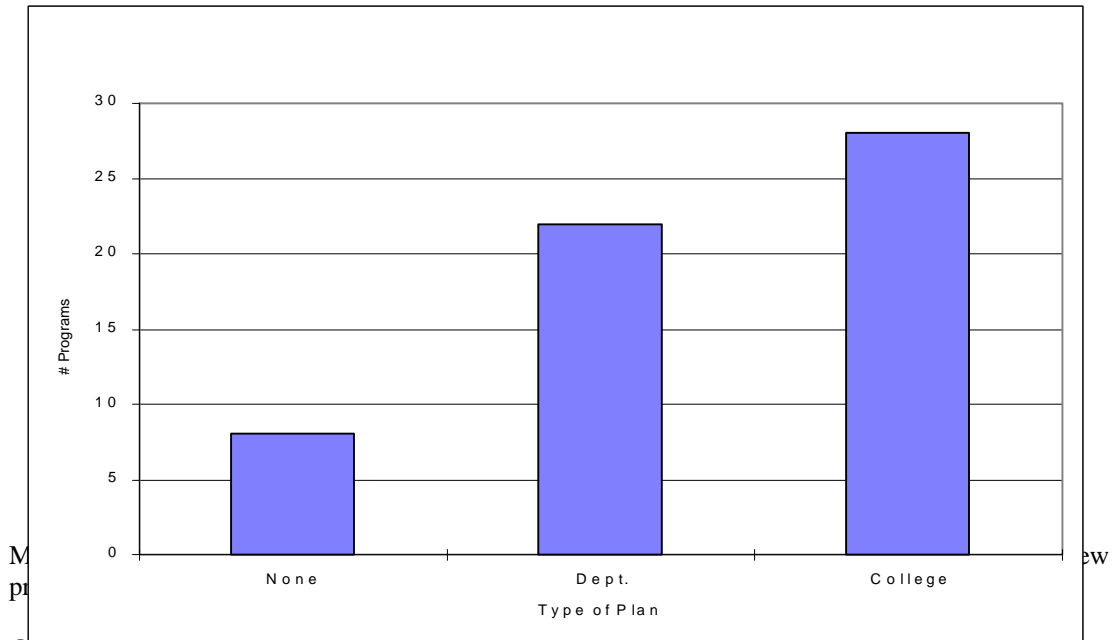


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indicated that faculty were given special allocation to either develop or implement instructional technology applications. Several programs did indicate that the use of instructional technology might be viewed positively by tenure and/or promotion committees. The provision of training was considered an incentive in some programs, as was the availability of mini-grants for development and/or use of instructional technology.

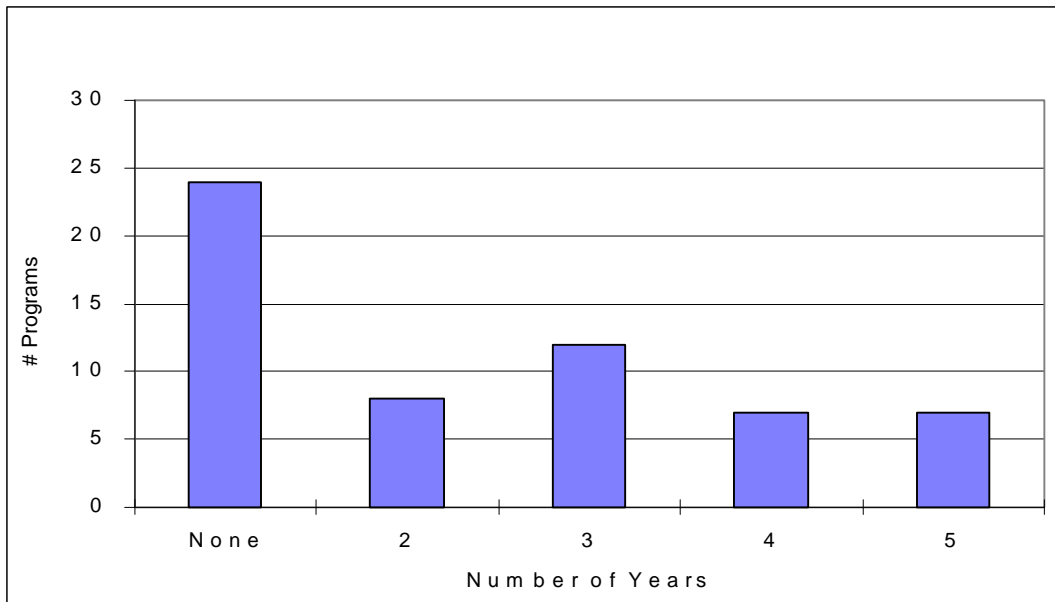
Support Personnel



Technology Planning



Over half of the programs reported no planned hardware upgrades for faculty. A few reported upgrades planned every 2, 4, or 5 years. Several indicated planned upgrades every 3 years.



PROFESSIONAL MBA ONLINE

Although great interest recently has arisen for distance learning efforts using Internet delivery, few full programs exist using this delivery system. Below is a case study of one campus' experience with the issues involved in developing such a program.

Background Situation

Until recent years, the School of Business of the University of Missouri-St. Louis has had a solid history characterized by high demand for students and strong growth among faculty and credit hours. The past five years have witnessed very significant enrollment declines. With these declines came pressure from central administration to increase student credit hours and/or revenues. Little interest existed to add more resources to the School. This led to a premium on using existing resources or for adding self-funding programs. The Internet MBA became one such offering.

Program Features

The program offering has several features to meet the needs of students, campus, and the market.

- 48 hour cohort program can be completed in 22 months
- Program is designed for working professionals
- Intensive on-campus class work (one weekend per month) with balance of course conducted using Internet delivery
- Curriculum based on current traditional program
- Premium Program: all aspects of the program are of the highest quality. Faculty members are the finest classroom performers. Students have three-year experience requirement plus traditional academic entrance requirements. Course offerings use executive MBA weekend format of Friday-Saturday once per month. Facilities and food are premium offerings.
- Quality of the program is higher than that of other graduate offerings in the School. This leads to a challenging educational experience for both faculty and students.

Students in the program receive technical support for on-line activities such as modem hook-up, software installation, etc. Also, both faculty and students receive instructional seminars on Internet usage and effective educational use of the web. Finally, student study groups are assigned to facilitate student interaction and group work on projects and general class assignments.

Potential Concerns

Faculty members expressed concerns on a number of issues involving quality and faculty preparation. On the issue of quality, questions were raised about the program, students and compressed format. Program quality is maintained by using the current curriculum, about which the faculty has confidence. Further, the dean is a member of the accreditation task force designing standards for distance learning programs; the School is assured of receiving good representation in the newly developed accreditation standards. Student quality is supported through a) increased work experience entrance requirements, b) and increased personal commitment that typically accompanies mature students who possess organizational recommendations. Finally, the compressed on-campus format has been spread into three sessions of eight hours initially, eight hours at mid-term, and four hours at the end of the term. This 8-8-4 format, when coupled with study groups is expected to have significant pedagogical benefits.

Faculty concerns included technological, experience, and capability issues. The program attempts to moderate these matters by providing a media/technological specialist to assist faculty in moving their

materials to a web format. Furthermore, faculty professional pride often causes concerns about a person's capability to do a creditable job using such a new delivery method. To help overcome this difficulty, faculty members are provided with Internet training (technical and pedagogical). Program quality also is maintained by using only strong classroom performers. The resulting program faculty exceeds that of typical (normal/traditional) program offerings.

Benefits of Program

Numerous benefits are associated with the Internet masters degree program. These are concentrated in the School, the faculty, and the students.

The School experiences numerous benefits including increased resources resulting from the profits of the program. The advertising associated with the program helps raise the profile of the School and identify it as a cutting edge institution. Thus, the School should have increased community visibility, reputation and presence. Also, to the degree that new students are attracted, enrollments are increased. At full capacity, the program will provide a significant financial contribution to the school. And, because the program is self-funding (tuition covers all costs), it does not erode the School's budget.

Faculty benefits from the program are both financial and professional. Financially, faculty members receive extra compensation (or teach "in-load") for participation in the program. Overload compensation is \$8,500 per course of 1.5 course credits if taught as part of "in-load". Faculty also are able to increase the flexibility of their time use as they teach in a flexible and asynchronous format. This flexibility and exposure to a new delivery system enhances the faculty's professional experience. It could also improve the research output by permitting more effective use of faculty time. Additionally, increased student quality and commitment results in a superior teaching experience for faculty members. Many report that this format provides the most satisfying teaching experience of their careers.

Students' benefits have sources in the intellectual growth associated with the program and in the job advancement such and experience enables. The Internet enhanced masters degree provides access to an accredited masters program that otherwise would not be possible for many students. It permits working professionals the ability to earn a degree without giving up their current jobs. Additionally, it provides students with important professional networking opportunities within and between cohort groups. This further enhances job skill and promotion prospects.

Pedagogical Aspects

Each course is eight weeks in length. It begins with an intensive on-campus classroom experience. These classroom sessions are equivalent to 53% of conventional class time. They are repeated at mid-term and the end of the course. Such face-to-face interactions preserve the valuable interpersonal components of traditional graduate education. The schedule includes the following face-to-face meetings: month one, course A begins with an eight hour session; month two begins with an eight hour session for course A (midterm) and an eight hour session for course B (beginning); month three begins with a four hour session (final) for course A, an eight hour session for course B (midterm), and an eight hour session for course C (beginning). Thus, students are involved with only two courses at any point in time. During these classroom sessions examinations and presentations are possible.

Study groups of five to seven students are assigned for group work, to build group spirit, and to assist each other in learning. These groups have the added benefit of providing support to each other during times of stress during the twenty-two month program.

Faculty expectations are the "same level" as for the traditional format. While the Internet component of the course is flexible, asynchronous, and involving, the same overall rigor and accomplishment of students is maintained. In fact, given that communication over the Internet permits more careful consideration of responses, the quality of interaction and response to questions is higher using this format than found in most conventional classrooms.

Students experience a “tutorial like” environment as the technology draws them closer to their professor and classmates. Each student can be “heard” and his/her questions answered—unlike conventional classrooms. Student written expression is enhanced because approximately half of the class is delivered in written format (Internet). An associated benefit of the program is that students become very familiar with personal computers, if they were not before the program. The PC loses its “mystery” and the student experiences “mastery”.

Key Aspects of the Program

There are several aspects of the program required for success. First, the program uses asynchronous delivery to provide the flexibility needed to accommodate the busy schedules of students. Second, more important than outstanding faculty and premium surroundings is the role of an effective staff person to interface with students throughout the program. Third, student study groups help maintain the cohort. It is this cohort that makes the efficiency of the program possible. Fourth, the program needs budget flexibility from central administration to succeed. As a self-funded program, the program director must be able to make the needed marketing, staffing, student selection, decisions to keep the program healthy. The program must be permitted to make a profit worthy of the effort it requires for success. One model of profit sharing is 30 percent to the campus and 70 percent to remain in the unit after all program expenses have been paid. Finally, the program needs an advocate or leader to speak in its interest and maintain its quality. This person needs to have academic rank and to have the respect of his/her peers.

