

Roadmap

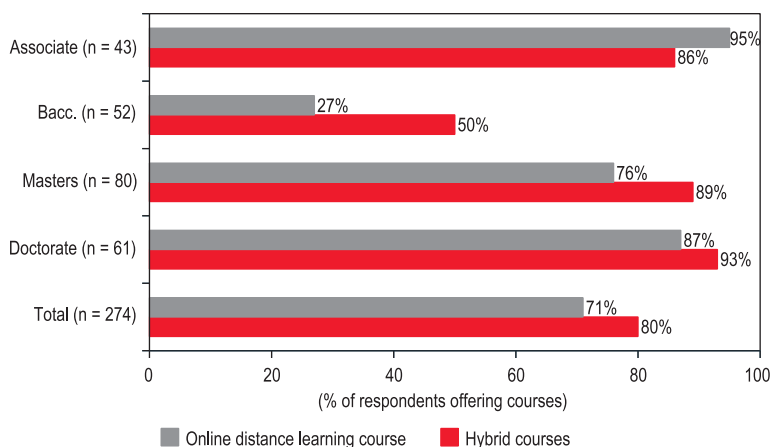
TOOLS FOR NAVIGATING COMPLEX DECISIONS

Supporting E-learning in Higher Education

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KEY FINDINGS

- ▶ Instructors and students underestimate e-learning’s time commitment.
- ▶ Students’ technical skills and infrastructure may not handle e-learning requirements.
- ▶ Institutions must balance and adapt a web of interconnected resources to support e-learning adequately.
- ▶ A course management system can make or break e-learning adoption.
- ▶ A menu of training options is needed to address varying training needs and learning styles.
- ▶ Because e-learning course creation is complex, a gradual incorporation of e-learning tools is recommended—perhaps using a formal course development program.
- ▶ 24 x 7 support gains priority.



As information technology (IT) becomes more robust and easier to use, it increasingly permeates academic activities in higher education. The use of technology in education, commonly defined as e-learning, has become a standard component in many courses. Technology applications are not limited to the classroom—they are also replacing some classroom sessions with virtual sessions or fully replacing classroom courses with online courses. As institutions adopt e-learning, some important new issues arise:

- ▶ Institutions must provide an adequate and reliable technical infrastructure to support e-learning activities.
- ▶ Instructors and students must possess the technical skills to use e-learning tools.
- ▶ Instructors must redesign their courses to incorporate e-learning effectively into their pedagogy.

But as e-learning courses multiply, institutions question whether they can provide the necessary support resources to address these issues. More than 70 percent of survey respondents indicated that growth in instructors’ support demands will outpace their institutions’ ability to provide the needed support. Sixty-five percent cited similar concerns for supporting students’ e-learning activities. Respondents stated that instructor training is a critical element in the success of e-learning courses.

Clearly, then, the support issue is becoming critical to the continued growth and success of e-learning in higher education. The EDUCAUSE Center for Applied Research (ECAR) conducted this study of e-learning support practices at selected institutions to ascertain current instructor and student support requirements; discover effective, centrally administered e-learning support practices for infrastructure, training, and course/curriculum development;

This ECAR Roadmap synthesizes the results of a survey of 274 EDUCAUSE voting representatives conducted in October 2002 and derives from the July 2003 ECAR report, Supporting E-Learning in Higher Education. Most survey respondents are senior information technology officials. To order the full study and learn about subscribing to ECAR, visit the ECAR Web site at <<http://www.educause.edu/ecar/>> or contact us at <ecar@educause.edu>.

KEY REPORT CONCEPTS

- ▶ **Online distance-learning courses:** The instructor conducts class sessions online—not via mail or telephone. This usually requires no face-to-face meetings between students and instructor either in the classroom or via video during the course.
- ▶ **Traditional courses supplemented with technology:** The instructor teaches all sessions in the classroom but incorporates technology in some or all classes (using PowerPoint, Web-based activities, multimedia simulations, online testing, and so on).
- ▶ **Hybrid courses:** The instructor combines elements of online distance-learning courses and traditional courses to replace some classroom sessions with virtual sessions.
- ▶ **E-learning courses:** For this study, this umbrella term refers to all three course types.
- ▶ **Centrally administered:** This term refers to departments that offer e-learning resources across the entire institution, including central IT departments, instructional technology departments, and central faculty resource centers.

and examine longer-term e-learning support challenges. This research doesn't intend to provide a definitive assessment on the overall state of e-learning in higher education.

E-Learning Adoption Characteristics

Institutions interviewed for this research cited various institutional, user, and market drivers as spurring the adoption of e-learning including faculty interest, student convenience, alleviation of overcrowded classrooms, or course management systems' (CMS) ease of use. Several of these factors can be at work in any given institution, driving adoption of multiple e-learning applications. All survey respondents have integrated technology into classroom-based courses, and a high percentage of doctoral, master, and associate institutions reported they have also implemented hybrid or online distance-learning courses, or both.

Online distance-learning courses generally got an earlier start than hybrid courses, but hybrid courses are now offered by a higher percentage of institutions than online courses (80 percent versus 71 percent), represent a higher percentage of overall courses offered in AY 2001–2002 (11 percent versus 5 percent), and enroll more of the institutions' students (13 percent versus 7.5 percent).

Instructor E-Learning Challenges

Instructors face new quandaries when implementing e-learning, mostly the time required to write rather than speak thoughts and to build interactivity into a course, and ongoing course maintenance (for example, updating Web links). Time management also becomes essential as instructors risk getting overwhelmed by students' communications, especially from the one-to-one nature of instructor-student interaction in an online distance learning course. When instructors teach an e-learning class, they must not only prepare for the class itself but also must develop contin-

gency plans in case of technical problems.

Instructors must consider students' technical limitations—bandwidth and computer hardware, for example—when designing online distance-learning courses. Some might be tempted to add multimedia components or complex Web pages to courses, but students might not have the network access to use them effectively.

Student E-Learning Challenges

Students encounter their own problems when taking an e-learning course. Many e-learning students lack confidence and experience with computers, and they may lack skills in commonly used applications like Microsoft Word, Excel, or PowerPoint. The access level differs for students who must use the computer lab versus those who own a laptop or desktop PC and can work at any hour in their rooms, creating something of a digital divide among them. Time-management skills and self-motivation also influence student performance in e-learning classes, which are as time-consuming as traditional classes.

A Web of Interconnected Resources

Given the challenges e-learning courses pose, especially for instructors, providing adequate support for e-learning activities is a complex proposition. Producing and teaching an e-learning course effectively entails a web of many resources, each facet or strand of which must be sound to ensure that the course succeeds as a whole. E-learning support resources are discussed below:

Infrastructure Resources

An institution's CMS can make or break e-learning adoption. An easy-to-use CMS lets instructors adopt e-learning gradually by initially posting course materials online or adding a threaded discussion, for example.

METHODOLOGY

ECAR and IDC, a provider of technology intelligence and industry analysis, conducted a three-phase research study.

- ▶ An online survey was conducted in October 2002 among 274 senior information technology officials in EDUCAUSE member colleges and universities that offer e-learning courses. The survey asked about their e-learning activities and challenges, current e-learning resources, and the support infrastructure that provides these resources.
- ▶ Interviews were conducted with multiple sources at 19 higher education institutions with illustrative e-learning programs to discuss effective e-learning resource practices and strategies.
- ▶ Six in-depth case studies, published separately, provide a look at how six leading e-learning institutions support e-learning, including lessons learned.

As instructors gain confidence with the e-learning tools, they can evolve their courses. CMS standardization provides a common platform on which to distribute knowledge and replicate or extend effective standardized processes.

As more instructors adopt technology in their classrooms, demand grows for standard-equipped and reliable technology-enabled classrooms. Rising e-learning course enrollment pushes student demand for computer access, resulting in overcrowded computer labs.

Continual planning is essential for keeping infrastructure up-to-date while achieving high return on investment. For example, institutions must not only provide adequate computer lab facilities but also must equip them for multimedia applications as students' needs evolve.

Training Resources

Most institutions offer a menu of training resources for instructors, such as one-on-one consultation, classroom training sessions, and online tools, to address varying training needs and learning styles. While one-on-one training offers personalized attention, resource constraints dictate the use of at least some classroom training.

Classes reach a broader audience and range from scheduled sessions on specific topics to more systematic training programs. Classes can help instructors achieve technical proficiency and provide a forum to exchange ideas. Institutions can personalize the classroom experience by augmenting teacher-led sessions with staff members who answer specific questions and address issues on each attendee's desktop computer.

Licensed online training resources are gaining popularity because they provide just-in-time training, supplement structured training sessions, offer a wider variety of training courses than many institutions can provide (if appropriately licensed), and can serve both instructors and students.

Other popular training techniques include short, focused training sessions, like brown-bag lunches to discuss a specific topic, or weekly drop-in sessions to let faculty discuss specific

technical or pedagogical problems on-the-fly. Others strive to train faculty about course management systems in a practical context to provide training in "an operational setting."

Course Development Resources

E-learning course creation is complex and time-consuming because instructors must reevaluate their courses and choose the most appropriate technical and pedagogical tools for e-learning applications. To facilitate the course development process, institutions recommended easing instructors into e-learning by gradually incorporating appropriate e-learning tools. Some institutions partner instructors and instructional technologists in formal e-learning course development programs that can last from 6 to 18 months. Institutions also need to support a wide variety of instructional techniques to suit instructor preferences and content requirements

Support and Help Resources

The scope, complexity, and access of support grow as e-learning gains popularity, easily straining an institution's resources.

Many of the institutions interviewed use the same staff to support all forms of e-learning. Some institutions do segregate most resources to address either instructor or student needs. Online training or help desk services, however, always service both instructors and students.

Today, about half of the survey respondents use staff members to handle e-learning support needs along with their other duties not related to e-learning. In two years, however, some institutions might move to more formalized staffing arrangements.

Survey respondents expressed a preference for staff dedicated to e-learning support, often as part of a dedicated e-learning support group.

One tricky issue for the support staff is the need for 24 x 7 support as instructors and students work on their courses days, nights, and weekends.

RECOMMENDATIONS

1. Make CMS Training a Priority.

CMS facilitates e-learning adoption, letting instructors experiment with e-learning and providing a standard platform for sharing information and processes. Once instructors decide to try their institution's CMS, the future of e-learning may rest on whether they have a good or bad experience. If instructors are not trained to use their CMS proficiently, they might be discouraged from adopting e-learning.

2. Evaluate and Adapt Support Resources to Meet Evolving Needs.

Once instructors understand the basic CMS features, they quickly want to apply multimedia and other advanced technologies. Institutions must therefore constantly adapt their resources and evolve training course topics and design to meet changing support requirements. Some institutions offer short focus sessions and online training to augment classroom training. Others adapt staffing, for example, by hiring more instructional designers to meet growing demand.

3. Set Time Investment Expectations, Offer Time Management Training.

Instructors and students frequently underestimated the amount of time needed to create, adapt, teach, and take an e-learning course. Institutions should set instructors' expectations at the beginning of the course design process to help them plan accordingly. Time-management resources should be a priority. Other resources—a Web page, informal workshops, or an orientation session to outline time-management strategies and tips—could help instructors and students address this problem.

4. Scale Resources to Meet Growing Support Demands.

Rising e-learning support requests tax current resources, and institutions might not have the funds to expand them accordingly. Some clear-cut actions are to turn every support request into an opportunity to promote technical self-sufficiency or incorporate easy-to-use e-learning support tools. Some share costs among institutions, using regional or system-wide consortium-style licensing agreements for CMS, especially when upgrading to an enterprise version. Others leverage resources in consortium, system, or open-source agreements, perhaps developing online versions of the core courses that are offered across the university system. Some develop common processes and tools to achieve economies of scale, for example, a systematized process to develop and maintain course systems or create the course framework and select its content centrally, giving the instructor the course materials to teach.

5. Implement Locally and Cultivate Grassroots Support.

Institutions can augment central resources at the departmental level, especially by adding locally based instructional designers to fulfill department-specific pedagogical needs. Another potentially important resource is grassroots support. Frequently it is more convenient and contextually relevant for an instructor to solicit help from colleagues with advanced technical skills or e-learning experience. Other resources institutions can employ to promote local or grassroots interaction include online faculty "lounges" or bulletin boards, or department-sponsored instructor study groups. As demand for e-learning support rises, a strong grassroots support network can help off-load the central support load. To implement these ideas, central support departments should work with department heads to have an early user or core of early users in each department trained in the institution's CMS.

6. Gain Administrative Support and Create Pro-E-Learning Policies.

Administrative leadership needs to create a cohesive institutional vision and a set of policies for e-learning that foster adoption and cultural change. Instructors may wish to try e-learning, but the required time investment could dissuade them from doing so, especially if the administrative climate does not recognize or reward instructors' participation in terms of tenure and promotion.