Issue Brief

CENTER FOR DIGITAL EDUCATION

Extending the Classroom to More Students in Higher Education

High Enrollment Demands, Stretched Resources

Higher education institutions are increasingly caught in a bind: Trying to serve growing enrollment demand with budgets based on the lower student counts of previous years. According to the Campus Computing Project's *2011 Community Colleges and the Economy Survey,* "More than two-thirds (69 percent) of the 448 campus presidents and district chancellors participating in the 2011 survey report increased headcount enrollment in winter 2011; concurrently, three-fifths of the presidents participating in the survey report a reduction in the overall operating budget at their institution; two-fifths (41 percent) report that the budget cut was five percent or more."[1]

This situation can lead to issues such as:

- over enrollments, especially in core courses, which creates a less-than-optimal and frustrating learning experience for faculty and students;
- delayed graduation for students because of enrollment delays; and
- reduced retention rates as students seek other schools that can offer smaller class sizes and faster degree completion.

Institutions typically can't solve this problem by adding more sections to a class. They don't have the budget to hire new faculty or support staff, and increased tuition revenues from higher enrollments may not cover the funding gap. Larger or overflow classroom space also may not be available, especially in an urban campus.

From these factors, the core challenge emerges: *How do campuses educate and graduate more students — with the same staff and classroom resources — while maintaining high learning levels and teaching standards?*

Using Technology to Scale Classroom Instruction

An emerging solution to this challenge is the use of blended learning curriculum design and lecture capture technology. This solution delivers courses through a mix of online and in-class content and participation.

Online lectures serve as the foundation of the blended learning model. The instructor can associate the lecture video with online content and collaboration tools in order to deliver a complete learning experience to both on-campus and distance students.

Availability of a recorded lecture can enable teaching and learning in multiple ways. For example, an inverted teaching model is possible. Students watch a video lecture before the class, then arrive ready to discuss the lecture's topic or work on a related activity.

By reviewing statistics on content access, instructors can identify where additional explanation is needed and improve the content of the lecture or study materials. Technology also helps instructors better serve students with special learning needs, using tools to create closed captioning of a video lecture and for compatibility with screen readers and other accessibility tools.

For students, the blended model delivers learning that is convenient and fits within their work schedules and personal lives. They can access the lecture video and other content from a PC, tablet or smartphone, and from anywhere they can connect to the Internet.

How Blended Learning Helps Higher Education

Technologies for delivering online access to classroom instruction offers several advantages for students, faculty, and their colleges and universities.

- Students can access the courses they need at the right time, increasing the likelihood they will graduate on schedule. A clear, certain education path also increases student satisfaction and retention.

- Faculty can use technology to teach more effectively and efficiently, even with larger class sizes. For example, reusable learning elements can reduce the time spent by an instructor on course preparation and individual student tutoring.
- The institution can support higher enrollment and tuition revenue goals by offering both blended learning and pure distance learning courses. This movement toward extending learning opportunities beyond the traditional classroom is already evident. In a survey of community colleges, nearly one-half of respondents have between 35 percent and 65 percent of students registered in distance or blended courses.[2]
- The institution has the flexibility to decide where and when to deploy blended learning technology. Lecture capture systems and other technology solutions can be implemented and supported for one classroom or many, based on budget, staffing and space constraints. At Catawba Valley Community College in North Carolina, the online course offerings have even helped to reduce the need for physical space.[3]

An Underwater Class

When officials at Passaic County Community College in Paterson, N.J., decided to close the campus in preparation for expected flooding, nursing students continued their learning by accessing pre-recorded course lectures. Faculty recorded these lectures with the college's lecture capture system and students were able to listen from home using a computer, smartphone or tablet.

Delivering course content during a natural disaster isn't the only benefit the Nursing and Health Sciences program at Passaic has gained from using lecture capture technology. Several faculty members routinely record their lectures and students receive an e-mail through the campus portal when the recording is posted.

"Nursing is a really difficult curriculum, so students definitely like having the ability to go back and review specific points in the lecture," says Donna Stankiewicz, assistant dean, Nurse Education and Health Sciences, Passaic County Community College. "It has also helped our retention rate in our most challenging courses, where students often struggle to understand and keep up with the material."

The college plans to expand use of lecture capture technology to record orientation sessions for adjunct faculty at local hospitals, develop video tutorials, and demonstrate clinical skills in conjunction with a CD-based learning program.

Student Perceptions of Blended Learning

Student perception and response are critical factors in measuring the success of blended learning courses and their underlying technology. Although still in early deployment at many universities and colleges, students are already expressing a strong preference for blended learning courses. A survey of adult students found that 33 percent cited blended courses as their preferred learning format.[4]

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– DONNA STANKIEWICZ, ASSISTANT DEAN, NURSE EDUCATION AND HEALTH SCIENCES, PASSAIC COUNTY COMMUNITY COLLEGE

This preference likely reflects the ease of access and use for blended learning systems. As an individual technology, lecture capture is viewed by students as a crucial learning resource. Working with lecture recordings and other online materials, students can review lessons, prepare for exams, and study independently or in small groups.

Recorded video of classroom lectures also helps students who are learning to speak a different language or have special learning needs. All of these factors increase student motivation to study, which improves their grades and retention.

Addressing Faculty Concerns

The blended learning concept requires some changes by faculty in how they design, deliver and support their classes. Table 1 describes the typical faculty concerns about blended learning courses and technology, along with suggested responses.

TABLE 1

FACULTY CONCERN	*RESPONSES*
Will I be replaced by a recording?	No, but the role of a lecture in teaching may change. Student access to recorded lectures can reduce faculty time spent reviewing previously covered material.
Protecting intellectual property	Video and online content can be protected by laws and institutional policies. Branding and copyright notices can be inserted into content to denote ownership.
Technology will distract from course content and teaching style	Technology can simplify and enhance many learning tasks and be more effective in reaching students with different learning styles and needs.
Extra time demands to manage technology	The right technology choices can save time, especially during class sessions, by automating common tasks.
Technology won't compensate for the extra demands of simply having more students in class	Requests for help in understanding lecture content may decline, because students can review and discuss the recorded lecture. Additional online study aids can be posted by the instructor to support student learning through independent and small-group study. Students can learn from each other in online study groups and through discussions.
Student attendance may go down	Introduce active learning techniques — pop quizzes and attendance policies — to deter students from skipping class.

Getting Started

As your institution explores a blended learning curriculum and the associated technology choices, the areas below will help it develop effective plans and identify appropriate resources for success.

Budget and funding sources. Moving toward a blended learning model requires investments in hardware, software and networks. These costs can be covered initially by sources such as an institution's IT budget as well as federal and state grants for technology and distance learning initiatives. Ongoing costs may be offset in part by increased tuition revenues from distance learning students.

Infrastructure planning. Identify the hardware, software, network and technical support resources that will be needed to support blended learning. Consider scalability of the infrastructure and the solution as blended learning classes become more popular among students and faculty.

Curriculum planning. Identify courses and classrooms for a pilot project. Identify student resources (e.g., popular devices) for online access as well as accessibility needs.

Planning for faculty and staff training. Survey faculty on their needs and interests for teaching a blended learning course. Identify the types of training that faculty and academic program staff will need to design and deliver effective blended learning courses, and to use lecture capture and other technology tools in the classroom.

One University's Experience: San Francisco State University

San Francisco State University (SF State) is proving that a HyFlex instructional model, which uses lecture capture technology as a core element to blend the online/classroom

environments, can help student success and address budget and enrollment challenges.[5] The university previously developed its own system for recording and managing lecture videos, however, this system required a large amount of hands-on staff work.

When it became clear that the in-house system wasn't sustainable, scalable or sufficiently accessible to students with disabilities, SF State sought an automated, commercial solution. The university uses this solution in more than 30 classrooms, recording lectures for online viewing by both local and distance students.

Although SF State faculty can choose when and how to integrate video lectures into their curricula, lecture capture is becoming increasingly popular and is used by faculty in all academic areas. Initially used for survey courses with enrollment of up to 300 students, lecture capture is now also used in classrooms that hold 20 to 40 students who are enrolled in graduate seminars and specialty courses.

SF State expects to see improved student performance in courses that use lecture capture. Students can view lecture recordings to review difficult concepts, catch up on missed classes and reinforce their learning. These capabilities are expected to result in higher grades, reduced student attrition rates and fewer students needing to repeat courses.

The university also benefits from a new, economical way to serve students. "Our HyFlex curriculum design allows SF State to simultaneously serve on-ground and online students without developing and maintaining a self-contained online degree program," says Dr. Maggie Beers, director of academic technology. "Although the California State University system will be creating more online degree programs, that requires a large upfront investment. Our HyFlex model is a good intermediate step."

Conclusion

Many higher education institutions will continue to face the challenges of serving more students with stable or declining budgets. To address these challenges, educators will look to new solutions for teaching and new technologies that enable student learning.

One such solution uses lecture capture technology as a core element of a curriculum that blends in-class learning activities with learning content and tasks that can be reviewed and completed online. With this blended approach, colleges and universities can economically serve more students and better meet their learning needs while maintaining high levels of educational quality.

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Endnotes

1. http://www.campuscomputing.net/item/community-colleges-and-economy-2011
2. 2010 Digital Community Colleges Survey, Center for Digital Education, http://media.navigatored.com/documents/2010_DataExpose_V.pdf
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4. Assessing Consumer Preferences for Continuing, Professional, and Online Higher Education by Eduventures, http://chronicle.com/blogs/wiredcampus/colleges-arent-keeping-up-with-student-demand-for-hybrid-programs-survey-suggests/30930
5. San Francisco State University presentation at Echo360 Community Conference, June 2010, http://209.222.146.135/ess/echo/presentation/38ee4945-3e03-4308-804f-a18d3a8eaf59