



NATIONAL
LEARNING
INFRASTRUCTURE
INITIATIVE

A G E N D A

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A N N U A L M E E T I N G N O T E S

New Orleans 2001

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WITH ITS NEW STRUCTURE, HIGH-ENERGY AGENDA, AND RECORD ATTENDANCE, THE ANNUAL meeting of the EDUCAUSE National Learning Infrastructure Initiative (NLII) set out this past January to put change into motion. Against the backdrop of pre-Mardi Gras New Orleans, more than 260 educators, administrators, and industry representatives gathered at the city’s Inter-Continental Hotel to discuss expectations and conditions for institutional transformation and to learn how institutions of higher education are leveraging technology to improve teaching and learning.

“We’re focusing on transformation because the nature and form of the traditional institution of higher education are transitioning,” said Carole Barone, EDUCAUSE vice president in charge of the NLII. In order to more effectively address the issues surrounding transformation, the NLII meeting agenda highlighted a select group of themes, such as resource allocation; assessment, evaluation, and quality assurance; online communities; institutional readiness; and partnering in the learning marketplace.

NLII Planning Committee chair William H. Graves, founder and chairman of Eduprise, noted that the NLII had a history of creating frameworks that help higher education navigate change. Much like hockey great Wayne Gretzky—who when asked how he always managed to be in the right place at the right time, answered, “I don’t skate to where the puck is; I skate to where the puck is going to be”—the NLII, said Graves, gives higher education “a framework for the trajectory of its own puck.”

Both NLII Planning Committee and staff members said participant feedback was overwhelmingly positive, with many participants commenting that much of what they learned at the meeting will be useful on campus.

Three plenary talks brought focus to the meeting’s overarching theme: *If You Can Change the Rules, Can You Rule the Changes? Conditions for Transformation*. Diana S. Natalicio, president of the University of Texas at El Paso, discussed the institution’s efforts to redefine itself in order to meet the needs of the community it served. The outcome of those efforts demonstrated how a willingness to take on systemic reform, combined with a highly focused mission and a clear commitment by an institution’s leadership, can revitalize education at all levels while serving an underserved community (see article, page 2).

While it is true that meeting specific educational objectives is critical to an institution’s academic mission, new technologies are challenging the way higher education meets those objectives. An Intellectual Property Plenary Panel traced changes in information technology, copyright law, and the economic climate surrounding higher education. In that session, James Hilton, special assistant to the provost for media rights at the University of Michigan; James Neal, dean of university libraries at Johns Hopkins

THE MISSION OF THE NLII HAS BEEN EXPANDED TO INCLUDE PROMOTING WIDESPREAD IMPLEMENTATION OF NEW COLLEGIATE LEARNING ENVIRONMENTS.

University; and Sarah J. Stein, assistant professor at North Carolina State University, shattered some of the myths associated with copyright law and outlined both its conventional role in education and how new technologies are stretching its limits (see article, page 3).

Completing the picture of the changing landscape was Judith S. Eaton, president of the Council for Higher Education Accreditation, who emphasized the need to rethink assessment and who challenged higher education to test alternative approaches to assessment that focus on student outcomes (see article, page 5).

New this year were featured sessions—each of them designed to offer in-depth examinations of such topics as the development of data and analysis to support decision making in higher education, institutional readiness for transformation, cooperative strategies for success, partnering in the learning marketplace, and exemplary communities of practice. Featured sessions were followed by companion sessions, which offered a venue for debate and discussion among presenters and attendees.

Rounding out the agenda were more than 25 concurrent sessions, organized around six issues: enhancement of academic/learning productivity; development of tools and standards to support new learning environments; transformation of the institution; development of new learning materials and markets; provision of evidence of the viability of these concepts, including outcomes assessment and costs/benefits analyses; and articulation of those public and institutional policy issues that inhibit the creation of a national learning infrastructure.

Next year's meeting will be held in San Diego, California, January 27-29, 2002, at the U.S. Grant Hotel. For more information about that meeting, see <http://www.educause/edu/nlii/meetings/sandiego2002>. **NLI**



FEATURED SESSION

Achieving Excellence in Education

Diana Natalicio changes the rules and wins the game

SITUATED AT THE BASE OF THE ROCKY Mountains along the Rio Grande in western Texas, El Paso has more in common with Mexico, which it borders, than with Dallas, Austin, or Houston. A majority of the town's Mexican-American

residents live in economically challenging circumstances, and until recently, many of the town's youth were not encouraged—or even expected—to pursue an education.

As a formidable presence in this binational city, the University of Texas at El Paso (UTEP) didn't always look like the city it served. Ten years ago, UTEP students were mainly white and middle-class. In an ongoing effort to polish its image, the university toyed with raising Scholastic Aptitude Test (SAT) score requirements in the hope that it would improve the school's competitive standing.

UTEP president Diana Natalicio changed all that. Today the university not only looks like the city it serves, but also its enrollment of more than 15,000 represents the largest new student increase in the past decade. More important and due in large part to a partnership among UTEP and the city's civic, education, and business leaders, the city of El Paso is benefiting from an aggressive program to revitalize education at all levels.

Natalicio spoke at the National Learning Infrastructure Initiative annual meeting in New Orleans about the systemic educational reform that transformed a university and a city.

"Less than 10 years ago, the best were leaving town and the rest weren't expected to achieve," said Natalicio. As the leader of a regional university, Natalicio felt strongly that the institution had a social obligation to the region. Raising SAT scores, she said, would only reduce enrollment and cut off the very students the university needed to serve. Instead, the university formed a cooperative to raise educational achievement at all levels and to help ensure that

"WE HAVE TO BE AUTHENTIC TO BE SUCCESSFUL. WE HAVE TO CONVERT OUR LIABILITIES INTO ASSETS."

—DIANA NATALICIO

students got properly prepared for enrollment at UTEP. "The university isn't leading the schools," Natalicio points out. "It's part of a partnership."

By all accounts, that partnership led to a complete change in the educational climate in the region. Content standards and assessment were revised, and educators at all grade levels began looking at the achievement of all students. "We helped students at all levels raise their expectations of what they could do."

Today the university uses course performance and not SAT scores to measure student outcomes. And now its student demographics reflect the demographics of the community. “We made a huge dent in attitudes and expectations,” said Natalicio. In addition, the institution has learned to value the role of technology as a transformation agent both socially and academically. In an article recently published in *EDUCAUSE Review*, Natalicio wrote that the institution “recognized the capacity of

new information media and telecommunications technology to contribute to the teaching/learning environment.”

Progress, however, has not come without difficulty, she said. Many residents fear that the population will become overeducated and that there will be no one to fill low-wage jobs. Some faculty members have expressed concern about UTEP’s being labeled a minority institution. Math and science teachers are hard to find. Local school boards become over-involved in

day-to-day operations at the K–12 level. And the university faces the ongoing challenge of educating parents about financing their children’s education.

Still, Natalicio says that the university’s success is measurable and that she is proud to display data that show progress. “We need to be realistic about ourselves,” she said. “We have to be authentic to be successful. We have to convert our liabilities into assets.” ■■■

PLENARY

Quality, Access, Cost—and Control?

What universities need to know about intellectual property

AS DISTANCE LEARNING SUPPLEMENTS—AND IN SOME CASES, replaces—traditional education, assumptions about course content, intellectual property, and relationships between educators and institutions invariably are being challenged. With courseware development becoming an integral part of today’s

educational landscape, what do institutions need to know about course ownership? And now that course materials are appearing on the Web, what do we need to know about fair use, particularly if what appears integrates the work of students?

Three experts on new media, copyright law, and education discussed those issues and raised new ones for university leaders at the NLII meeting in New Orleans in January.

If You’re in Control, You’re Not Going Fast Enough

“In the world of intellectual property,” said panelist James Neal, dean of university libraries at Johns Hopkins University,

“control is everything.” It is so important, in fact, that Neal suggests the NLII add it to its educational quality, access, and cost agenda.

Speaking to a roomful of educators, administrators, and technologists, Neal gave a crash course in copyright law. The law, he said, simply grants exclusive rights to an owner of a work, prohibiting others from using it and profiting from it without permission. To be protected, a work must be more than a spoken statement; it must be fixed in a tangible medium, such as a Web page. And it must be original. Conversely, anything in the public domain, such as documents that have exceeded the time limit for copyright or were published by the government, is not so protected.

However, new developments in the area of intellectual property have attempted to bring the law into alignment with present-day needs. The term of copyright, for example, was recently extended to life plus 70 years, as part of the Digital Millennium Copyright Act. And a number of other initiatives—such as the Collections of Information Anti-Piracy Act, the Consumer and Investor Access to Information Act, and the Uniform Computer Information Transactions Act—have all had impact on the way we operate in the age of information, according to Neal.

The question for higher education, he said, is whether copyright regulations need exemptions for distance learning. According to Congress, distance-learning and traditional classrooms should be treated the same. Faculty ownership, however, is not so clear. The arguments on the subject run the gamut. “The AAUP believes faculty should own content, and the AAU believes the university owns content,” said Neal. “There is a lot of disagreement over the copyright act’s work-for-hire clause and higher education.”

Neal suggests that universities consider the policy implications of course ownership, figure out where they are going with

(continued on next page)

courseware, and decide what it is they really care about.

Copyright Challenges

“No matter where you turn, you’re bound to bump up against media rights,” said panelist James Hilton, professor of psychology and associate provost of academic, information, and instructional technology affairs. “When it comes to copyright law,” he said, “whatever you think is right probably isn’t.”

THE LAW . . . SIMPLY GRANTS EXCLUSIVE RIGHTS TO AN OWNER OF A WORK, PROHIBITING OTHERS FROM USING IT AND PROFITING FROM IT WITHOUT PERMISSION. TO BE PROTECTED, A WORK MUST BE MORE THAN A SPOKEN STATEMENT; IT MUST BE FIXED IN A TANGIBLE MEDIUM, SUCH AS A WEB PAGE.

Hilton delivered a fast-paced lesson on what he termed copyright surprises, shattering the commonly held belief that copyright is primarily about protecting intellectual property. “Copyright was never intended to be about property,” he said. “According to Article I of the Constitution, its primary purpose is to promote learning.” How is copyright protection consistent with learning? To be protected, a work needs to be published and distributed.

Hilton said that copyright has never been about the protection of ideas. “Copyright protects the literal expression of ideas and not the ideas themselves,” he said. “Owning a work does not mean you own the copyright.”

Hilton offered several copyright challenges for universities. When examining intellectual property policies, institutions should do so with an eye toward articulating differences between patents and copyrights, unpacking the bundle of rights that come with copyright, and recognizing the multiple perspectives we bring to copyright. Hilton also suggested looking carefully at

conflict-of-commitment and conflict-of-interest practices and policies as well as advertising policies and practices, especially when it comes to dealing with the university’s name.


Like Neal, Hilton said universities should think through what matters to them, cautioning them against being ruled by fear. “If it’s all about owning intellectual property, can scholarship survive the knowledge economy?”

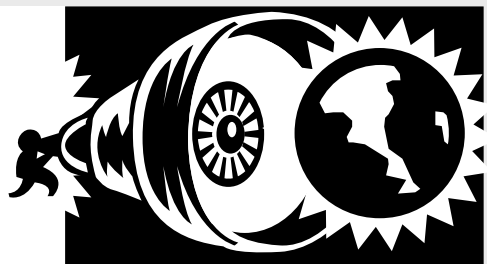
The Credit-versus-Money Equation

For more than a few years, higher education has wrestled with the problem of losing skilled technical staff to corporations. And for at least as long, it has been assumed that the issue was money. Not so, said panelist Sarah J. Stein, assistant professor in the department of communication at North Carolina State University. With more than 20 years as a documentary film maker, Stein offered a unique perspective on the process of courseware development in higher education. She said

courseware development is far too dependent on sophisticated tools and intensive support for single faculty members to develop on their own. In addition, it is a creative process that requires a substantial investment in technology and human resources in order to accommodate audio, video, and interactivity. With that in mind, Stein said institutions need to see courseware development as a team effort.

Comparing courseware development to film making, Stein pointed to the team of producers, directors, actors, writers, production designers, and casting directors that make up a film’s production team. “In today’s market,” she said, “courseware development means a team of institutional development professionals, such as designers, programmers, content editors, content experts, Web developers, and Web technical support.”

And like the film industry, credit is often valued more than money. “In higher education, it’s a fallacy to believe that people leave for money,” Stein said. “It’s really about acknowledgment.” Stein suggests that higher education do more to give credit to all the players involved with courseware development and take that involvement into account when rewards are considered. “We need to think about what we have to offer in higher education that can counter the corporate dollar.” 



Visit [HTTP://WWW.EDUCAUSE.EDU/NLII](http://www.educause.edu/nlII) for forthcoming announcements about the NLII Fellows Program, regional focus sessions, symposia & workshops

Competency and Accreditation in the Age of Quality

WITH ACADEMIC QUALITY TOPPING THE AGENDA OF MOST higher education discussions these days, can review standards, competency reviews, and accreditation be far behind? Not according to Judith S. Eaton, president of the Council for Higher Education Accreditation (CHEA), who

delivered a keynote speech on competency standards at the NLII meeting in New Orleans in January.

More attention to quality in higher education, according to Eaton, is essential. “President Bush’s agenda is an accountability agenda,” she said. “And while it is primarily aimed at K–12, that type of thinking is influencing higher education.”

With added pressure from Washington, Eaton warns that unless higher education takes responsibility for outcomes, government will step in. “There is federal interest in distance learning, and that interest emphasizes the centrality of outcomes,” she said. In fact, a report by the Center for Higher Education Policy group issued in December 2000, which developed indicators of higher education capacity in all 50 states, gave an I—or incomplete—to student learning. “It is a serious message when we can’t answer a serious question about what students learn,” Eaton said.

In contrast, private industry has had measurable success with outcome-based certification. According to Eaton, more than 2 million students have received competency certificates in information technology from the corporate sector. And in the absence of higher education’s own ranking system, consumers are getting their information about higher education from *U.S. News and World Report*. From quality and learn-

ing outcomes, it isn’t a big leap to accreditation—an issue that lies at the heart of Eaton’s organization. She points out that the relationship between accreditation and the government is and always has been delicate. “Fifty years ago, we made a deal with government that we would take care of quality and government would leave us alone while giving us money for funding and aid,” she said. “But if government decides we’re not doing a good enough job, they’ll get involved through legislation and regulation.”

Eaton says accreditation organizations work hard to ensure the independence of higher education and higher education’s access to public money. And they work equally hard to protect higher education’s values. But if they don’t address outcomes, higher education has a lot to lose. How is this being resolved? “More and more you hear about outcomes in accrediting organizations’ handbooks,” she said. “Accreditation for medical education has made enormous progress in this area, as have regional accreditors.” But Eaton said that a lot more can be done, such as surveying on campuses tied to student learning. “Of 56 accreditors, only two indicators of student performance were collected and with very little regularity,” she said.

In 1999 CHEA formed the Competency Standards Project, which was designed by the National Center for Higher Education Management Systems to test an alternative approach to accreditation review. A critical feature of the initiative is that it ties student learning outcomes to institutional judgments about performance. It applies a new approach to accreditation, which looks at three standards, each addressing teaching and learning. The first standard measures student outcomes and attainment. The second measures responsiveness to students. The third measures organizational alignment and support (are they aligned for a commitment to student learning outcomes?).

The program also helps higher education clarify the language surrounding out-



comes. “We often confuse student learning outcomes with conditions of learning,” said Eaton. “We talk about conditions—such as teacher salaries and support—and assume it’s tied to quality.”

According to Eaton, outcomes will remain a central issue in higher education. And while accreditation has done a good job in this area, more work needs to be done. Most important, she warned, is the need for higher education to remain independent. “If the public perceives a problem, there will be an interest in curtailing our independence.” **NLI**

Getting READY for Transformation

New tool helps decision makers get ready for change



MOST COLLEGE AND UNIVERSITY PRESIDENTS CAN'T ATTEND a meeting, read an e-mail, or scan the industry headlines without bumping into distributed learning and its companion, distance education. The headlines alone paint an all-or-nothing scenario: Distributed learning—whatever it is—means

everything ranging from record-breaking revenue streams to higher-quality education for twice the number of students to the last time you're going to see your budget in the black for the next two to five years.

Now, institutional leaders who are thinking about distributed learning can turn to a new, Web-based tool to guide them through the process of getting ready for change. Lev Gonick, chief technology officer at California State University–Monterey Bay, and Diana Oblinger, senior fellow of the EDUCAUSE Center for Applied Research and Professor of the Practice at the Kenan-Flagler School of Business at the University of North Carolina, gave National Learning Infrastructure Initiative attendees a glimpse of the new tool.

"The READY tool," said Gonick, "helps set the stage for administrators who want to take the plunge" into distance learning and provides a "safe space to discuss a huge undertaking not just about distance education and distributed learning but also about planning in general the future of the institution."

The tool, aimed at senior administrators, is Web driven (a prototype is visible at www.educause.edu/ready). It works by engaging decision makers in active learning about concepts as those decision

makers determine how to position their institutions with regard to a variety of key topics in educational technology. By using the tool, administrators gain an understanding of where to apply scarce resources strategically, of how to address institutional weaknesses, of how to take advantage of institutional strengths, of how to respond to new environments, and of how to move the institution along a change continuum.

The engine is designed to resemble a deci-

sion tree. It guides users through questions and answers and even enables groups of individuals from single institutions to participate en masse. The content offers institutional profile assessments with four areas of self-assessment—leadership, governance, competencies, and technology—and four content areas encompassing distance learning, student services, faculty engagement, and partnering in the learning marketplace.

"Decision makers go to the READY site and take a survey to self-assess their readiness," said Gonick. "It is a facilitated exercise."

Walking NLII participants through the distance education portion of the site, Oblinger said that the goal is not to score results but to "help you develop a conceptual framework, make choices, and create checklists." In fact, to ensure a consistent vocabulary, the site asks users to define distance education.

The READY developers expressed concern at what they saw as "institutions rushing off the cliff into distance education without really knowing what it was or why they need it," said Oblinger. Therefore, in

THE READY PROJECT

NLII STAFF MEMBERS, ALONG WITH MANY VOLUNTEERS, HAVE BEEN WORKING ON A WEB-BASED DECISION TOOL AIMED AT HIGHER EDUCATION LEADERS. THE TOOL ENGAGES DECISION MAKERS IN ACTIVE LEARNING ABOUT CONCEPTS AS THEY DETERMINE HOW TO POSITION THEIR INSTITUTIONS WITH REGARD TO A VARIETY OF KEY TOPICS IN EDUCATIONAL TECHNOLOGY.

CALLED PROJECT READY, EDUCAUSE ENCOURAGES THE NLII COMMUNITY TO REVIEW BOTH THE ENGINE AND THE CONTENT. GO TO THE SITE AND USE THE WEB-BASED FORMS OR SIGN UP TO BE PART OF THE REVIEW BOARD. EACH CONTENT AREA WILL RECRUIT A REVIEW BOARD AND WILL ARRANGE A REVIEW PROCESS INVOLVING CONFERENCE CALLS AND TESTING.

FOR MORE INFORMATION,
CONTACT VICTORIA CROSS AT
VCROSS@EDUCAUSE.EDU.

WWW.EDUCAUSE.EDU/READY


its Rationale and Needs section, the tool helps users figure out what elements are needed before plans are made. “It’s a great exercise for an executive team,” she said.

Of course, once an institution determines

that it’s ready, it needs to move to new ground. “The question after that,” according to Gonick, “is, Can you do it?”

The READY project leaders invite institutional leaders to review the tool and offer

feedback and comments. A working engine is expected by the end of March.

For updates, see www.educause.edu/ready. The team can be contacted through Victoria Cross at vcross@educause.edu. 

FEATURED SESSION

Faculty Development Tools That Drive Transformation

FEW WOULD ARGUE THAT THE CRITICAL LINK BETWEEN A student and a curriculum isn’t an instructor. So it’s easy to see why institutionwide transformation isn’t possible if faculty do little more with technology than give better lectures. For real transformation to occur, institutional change processes must

be coupled with pedagogical innovation.

In his session titled *Authoring Assessment-Rich Learning Environments: A Faculty Tool to Drive Transformation*, Donald Buckley, associate professor of biology and director of instructional technology at Quinnipiac University, discussed his research concerning cognitive development in learning and presented a new program at the University of Hartford, which trains faculty in educational technology authoring for the purpose of creating experiences that are pedagogically transformational. Buckley was recently named a Smithsonian Laureate.

“There is a revolution happening in education,” said Buckley. “Poor student performance has led to soul searching and the emergence of a new learning paradigm. We are entering the decade of the brain, which has given us new insights about the cognitive development of learning. And new computing tools are facilitating new learning processes through simulation, data collection/analysis and authoring, communication, and formative assessment.”

Education, he said, is moving from an instructional paradigm to a learning paradigm, and because of that, institutions must emphasize learning outcomes. “We tend to comprehend 10 percent of what we read, 20 percent of what we hear, 30 percent of what we see, 50 percent of what we both hear and see, 70 percent of

what we say, and 90 percent of what we say and do. We need to integrate pedagogies that are learning centered and inquiry oriented,” he said. “And we need to create interactive, sensory-rich, assessment-rich technology learning environments that will foster those goals in scaffolded activities that allow students to build meaning.” In that respect, technology can be an enabler.

While a relative handful of so-called early-adopter faculty members throughout


higher education have been phenomenally successful in the reengineering of learning environments, most are middle and late adopters. According to Buckley, higher education needs to engage that larger group of faculty.

The University of Hartford project that Buckley described articulates a pedagogical feature set for technology that comprises interactivity (to foster learning), sensory-rich information formats (to facilitate exploitation of new insights about the cognitive development of learning), and formative assessment. The system combines a pedagogical feature set of interactive multimedia learningware, a course management system, and a faculty development component. As an example of the new program in action, a tool for biology instruction was viewed by National Learning Infrastructure Initiative attendees. The tool builds on the

“POOR STUDENT PERFORMANCE HAS LED TO SOUL SEARCHING AND THE EMERGENCE OF A NEW LEARNING PARADIGM. WE ARE ENTERING THE DECADE OF THE BRAIN, WHICH HAS GIVEN US NEW INSIGHTS ABOUT THE COGNITIVE DEVELOPMENT OF LEARNING.”

—DONALD BUCKLEY

concept of the wet lab, offers instant feedback, and accelerates lab results. It also offers an overview of what happens in the process of discovery.

Buckley said that communications technologies and authoring tools can promote cooperative learning experiences and help students build meaning, especially when those technologies and tools are coupled with such pedagogies as case-based and problem-based learning activities. 

Policy Change in an Era of Transformation

AS INSTITUTIONS OF HIGHER EDUCATION LEARN TO OPERATE in a new era with new expectations, certain policy conflicts emerge between the rules as we know them and the rules as we think they should be. To address those issues, the Southern Regional Education Board (SREB) created a Distance Learning

Policy Laboratory to help reduce or eliminate existing or potential policy barriers to distance-learning activities in the areas of access, quality, and cost.

Speaking at the NLII meeting in New Orleans, Bruce Chaloux, director of the SREB's Electronic Campus, described the program's effort to define needed policy change and to promote the adoption of policies that would overcome barriers in the organization's region. The Electronic Campus is made up of more than 325 colleges and universities from all of the SREB's 16 states. Its goal is to utilize the connectedness of the SREB and the exist-

marketplace that would serve those needs," Chaloux said. "We wanted to overcome the barriers to distance learning, and we were hopeful that we could use our connections with governors and leaders to move policy in our states."

Chaloux and his team began by focusing on examples of best practices, which led them to become one of the original FIPSE Learning Anytime Anywhere grantees, theirs dealing with policy issues. With the grant in place, they assembled a team, created a State Partners Network, and formed a National Leadership Group for their Distance Learning Policy Laboratory. The

"WE SAW INSTITUTIONS MOVING IN THE DIRECTION OF DISTANCE LEARNING, SO WE STARTED LOOKING FOR WAYS TO CREATE A REGIONAL MARKETPLACE THAT WOULD SERVE THOSE NEEDS . . . WE WANTED TO OVERCOME THE BARRIERS TO DISTANCE LEARNING, AND WE WERE HOPEFUL THAT WE COULD USE OUR CONNECTIONS WITH GOVERNORS AND LEADERS TO MOVE POLICY IN OUR STATES."

—BRUCE CHALOUX

ing and developing strengths of the region's colleges and universities to establish a regional marketplace, create opportunities, reduce barriers to learning, and increase access.

"We saw institutions moving in the direction of distance learning, so we started looking for ways to create a regional

products spun out of the grant program include policy guidelines, a list of policy goals and actions, a set of best practices and exemplary models and approaches, and several pilot projects.

From the work emerged a list of 10 targeted issues that are believed to be the major barriers to effective distance



learning: credit, faculty, financial aid, finance and support for distance learning, quality assurance, academic student services, administrative student services, reaching the underserved, secondary/post-secondary connections, and tuition, which, according to Chaloux, has taken center stage. "Tuition is the big issue," he said, "the one that frames the policy challenges we have."

The solution is Electronic Tuition Rates—a single tuition charge for all students who enroll in a distance-learning course or program among the SREB's member institutions. The rate is set by each institution or system and is based on reciprocity, wherein regional agreements and levels of participation are created.

Equally important is the credit issue, but in this case the challenge is twofold: (1) promotion of recognition, acceptance, and the transferability of distance-learning credits

as well as the right to bank credits and (2) the promotion of statewide or systemwide articulation agreements in each state in the region. “Students want to know why it’s expensive to take distance-learning classes and why their credits for onsite classes at other institutions are not recognized elsewhere,” said Chaloux. “So we mandated recognition of credits in the region for onsite classes.” The SREB established a Regional Crosswalk building upon statewide or systemwide articulation agreements and extending them across the region.

The centerpiece of the SREB’s work in the area of distance-learning policy, however, is the Ways In program, which is a regional gateway or learning network that is nonproprietary and built to “work with what institutions are already doing,” said Chaloux. The plan called for the system to

accommodate plug and play, utilizing existing institutional or state application software programs.

The Ways In program Chaloux described encompasses a wide range of services, including the Learning Bank—which allows for the deposit of digital credentials to an electronic portfolio of academic credits, and continuing education units, and industry certification—and the Learning Passport, which targets generally qualified students seeking a course but without a home institution and which serves as an online alternative to the traditional admission process and application system.

The Learning Inventory serves what Chaloux refers to as “stop-in-and-out students,” who have accumulated credits but not earned a degree. It works by offering

online credit evaluation and serving as a comparison tool for degrees. The Online Coach is an online assessment of learning that is secure, offers interactive testing, is standards based, and provides immediate feedback. The assessment results are linked to online learning.

Chaloux cited a handful of lessons learned through the process of finding policy solutions to the barriers to distance learning, pointing out that most changes are still marginal and not systemic. “We represent the converted,” he said, “but we need to convert presidents and provosts.” In addition, he says the studentcentric model is still more talk than reality and that the benefits of collaboration are still to be defined in higher education. “We haven’t reached the ATM-banking stage yet.” **NLII**

FEATURED SESSION

Communities of Practice

THE WORK ENVIRONMENT FOR AN EMERGING GENERATION OF knowledge workers is framed by the computer screen. In the new age, workers operate in integrated environments that feature new communication media over the Net, such as

instant messaging, audio, video and telephony, groupware for collaboration, and sophisticated, integrated, organization-based knowledge management systems.

At the NLII meeting in New Orleans, a featured session with panelists Mark Schlager of SRI International and Stephen Weimar of WebCT showcased exemplary communities of practice and addressed how community technology can support educational groups and organizations and thus foster the transformation of higher education.

Organizations, according to the panelists, are developing for their members a

working, learning, and connecting environment that is personal, engaging, and integrated—one that creates a seamless experience for members that, with the creation of virtual communities, extends across physical and virtual realms. This working, learning, and connecting environment is expressed via the Web and represents an integrated hybrid of the virtual and physical with the features of asynchronous communication; synchronous communication; content (information resources) and management, such as information review and quality control; and the ability for individuals to customize menus.



Communities of practice were discussed at the NLII meeting as a means of creating an engaging environment for students and faculty and also for NLII members and member subgroups. Over the course of the coming year, the NLII will pilot several communities to learn more about their needs and behaviors. **NLII**

A Question of Quality

CONVERSATIONS ABOUT DISTANCE LEARNING HAVE USUALLY been dominated by discussion of new technologies and optimistic predictions about the coming revolution in higher education. But increasingly, the notion of quality assurance is asserting itself as more and more colleges and

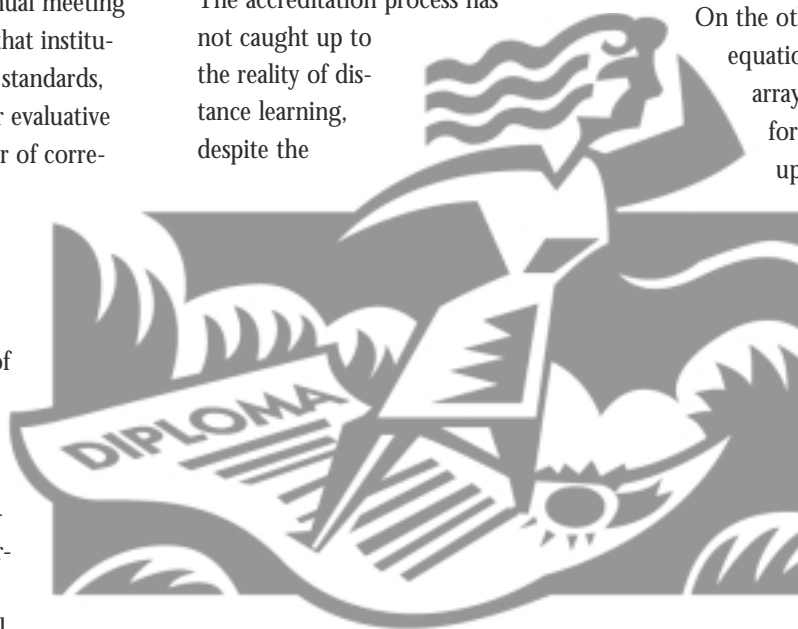
universities add alternative programs to the curriculum. Education specialist Carol Twigg turned the spotlight on standards and quality at the NLII's annual meeting in New Orleans, suggesting that institutions and students need new standards, more information, and better evaluative tools for the growing number of correspondence schools, certification programs, and online classrooms nationwide.

Opening her address with a nod to the amazing growth of distance- and distributed-learning programs, Twigg quoted a market research firm's assessment that 63 percent of all colleges and universities currently offer such courses and that an additional 31 percent will soon join the club.

Accrediting associations can't keep up, she warned, and no consensus has yet emerged on how to measure the quality of courses that defy the conventional portrait of a tenure-track Ph.D. lecturing to a classroom filled with matriculated students.

Providers of this new brand of education currently operate in a world without standards, Twigg observed, one that offers exciting and often radical alternatives to traditional college courses but without quality assurance standards or even common agreement on the meaning of quality. This environment is dangerous for institutions promoting new programs, she

warned: Internet or correspondence classes might be perceived as susceptible to fraud or existing outside the faculty's control. The accreditation process has not caught up to the reality of distance learning, despite the



rapidly expanding list of colleges and universities that take it seriously.

Basing her remarks on the results of a symposium of educators titled Preserving Quality in Distributed Learning Environments, that she chaired last year, Twigg laid out the current dilemma for colleges and universities currently tethered to the traditional accreditation process: Regional accreditation is based on the belief that if high-quality teachers and facilities are in place, then high-quality education will be the natural outcome. Courses and programs are bundled together with the institution and often viewed through the

all-important lens of a college's "reputation." How can distance-learning programs be measured by the same yardstick applied to "accredited" four-year colleges?

By using the symposium's responses to the 24 benchmarks for measuring quality assurance published by the Institute for Higher Education Policy (IHEP), Twigg suggested that quality assurance might focus first on individual courses rather than on institutional health—a necessary shift in emphasis if distributed-learning environments, with their consumer-oriented approach, are to thrive.

On the other side of the distance-learning equation, students face a bewildering array of choices (one Internet search for a marketing course might pull up thousands of hits) and an appalling lack of reliable information. Fuzzy course descriptions, out-of-date contact information, confusing data on matriculation, and unclear instructions about course procedure are commonplace, Twigg complained. But the same technology that drowns consumers in choices can also benefit students.

Twigg envisioned a future scenario in which technology assists students in making sound consumer decisions. With the right search engine, for example, students could choose courses from among thousands of options by tailoring the search to their individual preferences. They might also rank and evaluate their classes by using student reviews posted on the Web for public consumption. Consumers could evaluate courses based on a set of accepted criteria, such as institutional support, course development, course structure, teaching, student support, value, and flexibility. Additionally, experts both inside and outside the institution might offer their input by grading the course for interested students. ■

Principles of Scalability

WITH MANY INSTITUTIONS SEPARATING THE PROCESSES OF readiness assessment, faculty engagement, and support for faculty, it is possible that those processes are more effective and sustainable when they involve significant overlap. Paul R. Hagner of the University of Hartford and former

NLII fellow and Joel Hartman of the University of Central Florida spoke at the NLII meeting in New Orleans on how those processes work and their influence on scalability of transformation.

“Changes in the way faculty deliver teaching and learning need to be systemwide,” said Hagner. “To do this you have to discover what motivates your faculty.”


Hagner and Hartman say there are four distinct faculty motivational categories: Entrepreneurs are those faculty members who possess the skills to self-start their classroom innovations. Risk-averse faculty members embrace the promise delivered by the new technologies but lack either the skills or the resources to use them. Careerist faculty members begin using new technologies only when they perceive a professional payoff for doing so. Finally, “atheist” faculty members either see no value in using new technologies in their teaching or have no intention of becoming computer literate.

Before a transformation plan can be developed, institutional leaders must learn what mix of faculty types exist at their institutions. “The best way to do this is to talk to the faculty,” said Hartman. “During those discussions, not only can you assess the faculty member’s motivational category, but also you are given an opportunity to begin the engagement process by doing demonstrations using a Web site such as MERLOT.”

Faculty engagement, however, cannot be

separated from the faculty support structure. According to Hagner and Hartman, there are three models of faculty support: The lone ranger model generally describes the individual faculty member who is going it alone. Those efforts produce products that are neither scalable nor sustainable. The boutique model is one whereby faculty members work with support personnel on a one-to-one basis. Those models are often

time-consuming and also not scalable, especially as more and more faculty members become engaged. Hagner and Hartman advocate a systematic model, which allows for the development of learning materials through systematic relationships between the academic and the support sides. Such an approach requires choices and standards, but is capable of being scaled as demand increases. The implementation of such models, however, requires a strong commitment on the part of university leadership.

Hagner and Hartman suggest a few guiding principles: First, don’t generalize across faculty; talk to them. Second, select a tool and use it well. Third, make processes and resources scalable. Fourth, know that assessment is not an option. And finally, not making a choice is a choice. 

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“I Shrank My Class”

Transforming large classes

HOW DO YOU MAKE LARGE classes a venue for active learning? The answer, according to John J. Cahir and John Harwood of Pennsylvania

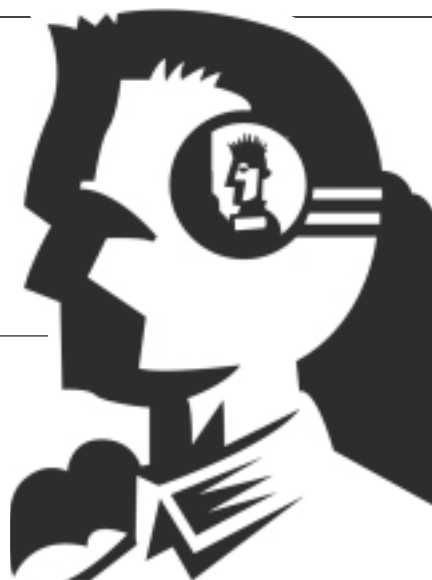
State University, lies in using technology wisely.

During the past few years, Penn State has been transforming a handful of high-enrollment, high-impact courses taken by hundreds of first-year students into innovative, active learning environments. Today Penn State students are learning to be more-active participants in their own education and are engaging more substantially with faculty and peers about course content.

For years, large-scale freshman-level courses have been the norm at colleges and universities. The environment is usually distracting and impersonal, with hundreds of students moving anonymously through auditorium-type rooms, listening to lectures, viewing slides, and being graded by teaching assistants. Attending to individual student needs poses numerous challenges. “Even handing back quizzes is a nightmare in large classes,” says Cahir.

Penn State decided it wanted to find ways of applying technology to large-scale courses that would increase learning gains and reduce instructional costs. “We were interested in changing the environment to emphasize active and collaborative learning,” says Cahir, vice provost and dean of undergraduate education.

Preparing an educational environment for transformation, however, takes more than



planning and theory. It requires an investment, and Penn State was clear that it needed to adhere to low-cost solutions and enhancements. The payoff, though, was substantial. “Today,” says Cahir, “you’ll see students working together in ways not seen before.”

“Teaching is partially a diagnostic process,” says Harwood. “We want to discourage bad habits and encourage good habits. And you have to sell students on working harder than they do.” That becomes difficult in large classes, and with more and more students coming in each year, it becomes difficult to scale large lecture courses effectively.

Harwood says the one-size-fits-all model was doomed to fail because lecturers usually ignore variations in student preparation, ability, and interest. Technology offers the opportunity to make learning more interactive and adaptive: students are engaged in the process and instructors can monitor progress. It also makes it easier to change the content to suit the situation and, theoretically, to make changes to suit an individual student’s learning style.

In fall 1999, Penn State began the process of transforming its freshman-level biology class with 100 randomly selected freshman who would serve as computer learners. In this group, the students complete Web-

based modules rather than attend lectures. The modules are carefully designed to emphasize the most critical concepts for each unit and to enable students to work independently or in groups.

Eight hundred students were assigned to the control group representing traditional learners. Both groups were given the same midterm examination. The result was a substantially higher success rate among the online learners. A more sophisticated phase of the transformation began in fall 2000, with much greater results among online learners. In addition, costs were reduced.

In statistics the institution saw similar results. Prior to the transformation, students typically had experienced apathy and lack of motivation. There was not much about the learning environment that could be described as active, and it was difficult for students to ask questions, discuss concepts, and collaborate with other students. Worse, students did not end up prepared for follow-up courses.

“WE WANT TO DISCOURAGE BAD HABITS AND ENCOURAGE GOOD HABITS. AND YOU HAVE TO SELL STUDENTS ON WORKING HARDER THAN THEY DO.”

In response, the institution created a clear list of goals for student comprehension of content and devised a set of guiding principles for its Statistics 200 class. Those goals include the ability to understand the reasoning by which findings from sample data can be extended to larger, more general populations; to critically evaluate the results of quantitative studies; to design, conduct, and analyze a problem solution; to read statistical summaries; to use statistical software to analyze data; and to study and understand examples and applications from a variety of fields.

In the restructured course, there is one large-group weekly meeting led by an instructor who is helped by teaching assistants (TAs) and undergraduate interns. That is followed by two meetings per week in a computer lab, which is suitable for group work, with 60 students and instructor- and TA-led labs.

A Readiness Assessment Quiz was developed to motivate independent student learning and assess students' preparedness for applications in labs. Lab work is now done in groups, and each student has a personal computer in the lab. Quizzes and surveys are all computerized; the institution has invested in Minitab, a statistical software package; the course utilizes Web-based materials; and course material is housed on the course Web site. This has resulted in more faculty contact with students, collaborative learning, and more-active learning.

Learning outcomes in this case show the transformation has paid off. Following the spring 2000 pilot, the pilot students significantly outperformed traditional students in posttest. In the fall 2000 pilot, the posttest results showed an additional gain.

How have students reacted? According to Harwood, students prefer the new structure. Instructors, however, have noticed an increase in their workload, but Harwood says that is expected to be reduced. The model is easily transportable to other campuses at Penn State (or elsewhere), and Penn State has experienced substantial external interest in the model.

While Penn State is committed to continuing the transformation, according to Harwood, some questions still remain: In what ways will the traditional residential experience be changed as we add modes of communication and interaction outside the class? In what way will other large-enrollment courses seek to change their structure? How will we support this? And how will the experience in one course interact with the experience in another? **NLII**

CONCURRENT SESSION

Distributed Learning Programs That Work

HIGHER EDUCATION IS ABUZZ LATELY WITH TALK OF DISTANCE learning, online courses, and the blended campus, but a few institutions are leading the rush to alternative education with programs that work. Two presentations at the NLII conference in New Orleans in January captured the essence of

this revolution in higher education, celebrating the new, blended campus at the University of North Carolina at Wilmington (UNCW) and the WebM.B.A. program at the University of Baltimore.

Touting the obvious institutional benefits of blending traditional courses with online

of its own market. The administration believed a limited Web curriculum would relieve some of the pressure, but Cavanaugh was well aware of the risks. The public perception of "virtual classrooms" was still shaky. Would online and traditional classes become polarized, occupying separate but unequal territories in the university? Quality was an issue. Would Web courses be as comprehensive as more traditional offerings? UNCW hired Eduprise to help answer those questions and fashion a program that worked.

The resulting program is highly egalitarian and fully integrated into the campus environment. Part of the core curriculum, the new, online classes are available to all students with for-credit Web courses offered in the business, education, nursing, computer science, and criminal justice departments. Several levels of alternative courses are offered at UNCW: technologically enhanced classes, which include partially "distanced" Web-enhanced and Web-supported courses as well as instruction on CD, DVD, and video; one-way and two-way real-time courses utilizing video links; and online classes that are entirely achieved without students' setting foot in a classroom. Combined, those options make Web and distance learning available to every student on campus.

Graves returned to the podium again during the conference to highlight another

(continued on next page)

WOULD ONLINE AND TRADITIONAL CLASSES BECOME POLARIZED, OCCUPYING SEPARATE BUT UNEQUAL TERRITORIES IN THE UNIVERSITY?


versions of core classes, UNCW administrators John C. Cavanaugh and Robert E. Tyndall joined Eduprise founder William Graves to outline the university's transition to a blended campus. Facing growing pressures on its facilities, UNCW contracted with Eduprise to facilitate the transformation. Higher rates of enrollment were straining the physical limits of UNCW, so the college began offering students the option to complete some of their course work in cyberspace.

Cavanaugh, who serves as provost and vice chancellor of academic affairs at UNCW, painted a vivid portrait of an institution in crisis. Unparalleled growth, limited classroom space, and a burgeoning constituency of nontraditional students searching for alternatives were taxing the university's ability to meet the demands

successful and innovative initiative—this time the University of Baltimore’s revolutionary WebMBA program. With a sizable population of older, nontraditional students and vibrant, competitive law and business schools, the downtown Baltimore college was ripe for the transition to online learning. Speaking on behalf of the institution, Provost Ronald Legon described the miraculous new Web track in the school’s already successful M.B.A. program. The administration selected the largest, most visible academic

THE ADMINISTRATION BELIEVED A LIMITED WEB CURRICULUM WOULD RELIEVE SOME OF THE PRESSURE, BUT CAVANAUGH WAS WELL AWARE OF THE RISKS.

program on campus to lead the way. Nine students initially enrolled in the new M.B.A. track, which offered four 10-week terms and was designed to be completed in two years. Six students graduated in the first class, and the program received national attention at its official launch by the New York Times and CNN in January 1999.

According to Legon, the M.B.A. program offered an excellent entrée into distance learning. Most business school faculty members were already wired and using the Internet in various ways to teach. The graduate program was inexpensive and unencumbered with campus residency requirements and could rest on its AACSB accreditation. Eduprise was contracted to facilitate the transition in May 1998. Initial funding was drawn from university reserves. In three years, the program has broken even well ahead of schedule and has expanded its offerings to comprise 18 online courses and 28 online sections. Program enrollment is now up to 488. 

CONCURRENT SESSION

Evaluation, Assessment and Quality Assurance

HOW CAN WE TELL THAT TECHNOLOGY IS HELPING US MAKE institutional progress? The answers were shared by Steve Ehrmann of the Flashlight Program and Carl Berger of the University of Michigan, who talked about measuring change and looking for evidence of progress in two different sessions at the NLII meeting in January.

As Ehrmann noted in his presentation, titled *You Can’t Rule the Changes If You Can’t See What You’re Doing*, change usually starts slowly at the bottom and works its way up. “Sometimes the patterns are invisible,” he said, “and that isn’t always a good thing.” Both presenters found ways to make the unconscious visible and to show how information can be used effectively in the transformational process.

Ehrmann challenged session participants to reflect on a series of questions: What are we doing with technology? What are the transformational uses/changes in operation and character that are the results of its use? How might we track these as NLII institutions, both individually and as a group? What are the barriers and opportunities inherent in the adoption of technology and that affect progress locally? Moving beyond some of the so-called normal uses of data to improve teaching or information technology support, Ehrmann proposed a next step: If NLII institutions were to track transformational changes in operation and character both individually and as a group, spot barriers and opportunities affecting each program locally, and evaluate institutional responses to such challenges, the sum of the parts would result in vastly more effective strategies.

Ehrmann set the context by focusing on the nature of transformation—that is, the expansion of resources and opportunities

to more teachers and learners through sharing, new divisions of labor, and different approaches to coordination—in effect dissolving the previous limits of space and time. It is possible to see these elements of change on campus, where traditional modes of research and inquiry, teaching, and learning have been displaced by new resources, changes in pace and delivery, and a different student constituency.

In order to better understand the outcomes of the transformation process, Ehrmann proposed a method of longitudinal evaluation meant to help institutions

“WE NEED TO BE MORE THOUGHTFUL ABOUT THE DATA WE COLLECT, WE MUST WORK COLLABORATIVELY TO GATHER COMPARATIVE DATA, AND WE MUST CONSIDER NEW WAYS TO USE THAT DATA IN ORDER TO EFFECT INSTITUTIONAL CHANGE.”

—STEVE EHREMAN

better understand needs through collection and analysis of appropriate data; comparison of results to those of other, similar institutions; careful evaluation of real and perceived barriers and challenges that might inhibit change; identification

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Sustainable Pathways for Strategic Change

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) HAS launched a series of educational change initiatives involving the creation of technologies, tools, and content to improve teaching and learning. In this context, strategic change is taken as an indication of intention—a deliberate choice, yet

one that results in a subset of directions that are consistent with core institutional values.

In his session titled Sustainable Pathways to Change, MIT's Vijay Kumar described the four key initiatives. The first initiative was born out of two reports developed by the Educational Technology Council and a Task Force on Student Life and Learning issued in the late 1990s. Both reports, according to Kumar, were intimately connected to the institution's core values and encouraged experimentation in distance education and educational technology.

The second initiative was described as a set of bold experiments in university collaboration. The Singapore-MIT Alliance and the Cambridge University-MIT Institute now represent new paradigms for distance collaboration in education, research, and technopreneurship.

The third was educational transformation. This involved the MIT-Microsoft alliance—Project I-Campus—a collaboration designed to enhance university education through information technology, and the D'Arbeloff Initiatives for innovation in education at MIT, which was meant to enhance and potentially transform the academic and residential experience of MIT's first-year students.

MITCET—the MIT Council on Educational Technology—which represented the final initiative, was established to provide

strategic guidance for MIT's efforts to develop an infrastructure and initiatives for the application of technology to education. It was also intended to help enhance the core educational experience, meet the needs of lifelong learners within MIT's student population, and create flexible ways to pursue education and research excellence.



The challenge for MIT, as Kumar expressed it, was to decide “what it wanted to be when it grew up” given the plethora of opportunity. Any initiative had to be sustainable, viable, and maintainable; have a long-term, large-scale impact; and offer a return on investment.

At MIT a small number of strategic thrusts were preferred to random, isolated, individual efforts. Those that were supported all reached beyond MIT's traditional com-

munities to extended ones. All projects focused on collaborative processes with collaboration as an intrinsic part of the learning experience.

In the selection of projects, MIT focused on the three elements of sustainability: educational sustainability (Will the project result in a structural change to MIT education?), institutional sustainability (Is there universitywide commitment?), and technological sustainability (Are changes to components of the MIT infrastructure required? Can there be seamless integration into a heterogenous environment?). The rest of the presentation focused on aspects of the planning process and associated outcomes.

The projects were grounded in Havelock and Huberman's sustainability dimensions (ORACLE), which were developed from

an analysis of 500 innovations: the object or promised benefit, the timeliness and longevity of resources, authority and leadership, consensus to be developed at multiple levels, linkage to the existing infrastructure, and all within the existing environment.

MIT's choices had to fit its mission; the core beliefs expressed by faculty, students,

(continued on next page)

alumni, and staff; and the inseparability of teaching and learning. The MIT values of excellence, entrepreneurship, faculty autonomy, commitment to the idea of a single class of faculty, and the uniqueness of the MIT community formed a critical filter around project selection.

The projects had to complement the institutional vision and the concept of bold new models for university collaboration. Would they be “highly visible, world-class education and research programs” in areas of strategic importance? Could they contribute to new paradigms for distance collaboration in education research and technopreneurship? Ultimately, the project outcomes were much more than product based. They resulted in new approaches to teaching and learning and collaboration, including leveraging content across disciplinary boundaries, innovation in active learning, new types of dynamic interaction between

MIT students and external expert professionals, innovation in the development of complex simulations and virtual design labs, collaborative user environments, and ways in which alumni could continue to be engaged in lifelong learning.

ULTIMATELY, THE PROJECT OUTCOMES WERE MUCH MORE THAN PRODUCT BASED. THEY RESULTED IN NEW APPROACHES TO TEACHING AND LEARNING AND COLLABORATION.

In exploring the criteria for sustainability, Kumar spoke to the issues of value and reward, the significance of the educational impact, the pursuit of educational excel-

lence, and the significance of the innovation. The scale of impact must be more than the transformation of a course at the local level; it should be potentially worldwide. An implementation plan should be distinguished by concrete deliverables, not vague ambition, and it must be possible to disseminate the results of a project unencumbered by restrictions, such as IPR, or use of proprietary materials.

MITCET affirmed the value of its residential program as a fundamental gateway to the community, but it also recognized “the infinite corridor” that could be extended through the use of technology to connect MIT with global partners. Kumar noted that when building those strategic choices, “we must build the right structures that support them.” MIT’s choices appear to be embedded in institutional values and thoughtful change. ■

EVALUATION, ASSESSMENT AND QUALITY ASSURANCE

(continued from page 14)

of opportunities that might facilitate change; and development of appropriate actions in order to address the deficiencies or explore the opportunities identified.

At the University of Michigan, Carl Berger is making assessment part of the institutional culture. In contrast to Ehrmann, who focused on strategy, Berger—in his presentation, titled *Everything You Wanted to Know about Faculty and Student Surveys and Aren’t Afraid to Ask*—examined ways of articulating survey questions in order to generate the most useful information, present the findings most effectively, and ensure the greatest possible residuals. “We have a responsibility not to squander the assessment opportunity, as well as a responsibility to do something meaningful with the data,” he said.

Berger’s case study was a faculty survey designed to improve understanding of the role and use of information technology at the University of Michigan. Distributed in the spring of 1999 to a random sampling of 1,500 university faculty members on the Ann Arbor campus, the survey assessed faculty use of stand-alone applications and tools such as e-mail, Web pages, and simulations. The results of the research were meant to help evaluate information technology resources on campus and to serve as the basis for the design of plans for improving the effectiveness of those resources for university faculty. Ultimately, the survey provided answers to many critical questions regarding levels of faculty expertise in the use of technology, the ways in which technology was being integrated in instruction, the choices of tools and applications, and the reasons for lack of use of technology in instruction. The results offered a useful snapshot of what is

and what can be in terms of barriers to change and faculty needs.

Berger spoke persuasively of what can be done to make better surveys—including design, distribution, follow-up, and rewards for participation—as well as how to make the most of survey results. Focusing on the use of decision graphics and colormetrics to help make results easier to interpret, he explored presentation methods that were visually attractive, engaging, stimulating, and memorable to the viewer. “Report statistics sparingly, look for variation, look out for range, minimize tables and charts for comparison, use graphs with care, watch out for chart junk, and avoid false 3-D and clutter,” he said. “We need to be more thoughtful about the data we collect, we must work collaboratively to gather comparative data, and we must consider new ways to use that data in order to effect institutional change.” ■

UVA's Teaching + Technology Support Partners Year 2

Cost-effective distributed faculty support: bringing the mountain to Mohammed

By Jeff A. Hollier, Instructional Technology Advisor, University of Virginia



THE UNIVERSITY OF VIRGINIA'S TEACHING + TECHNOLOGY Support Partners (TTSP) program, begun in fall 1999, is designed to meet two immediate goals. First, it provides individual assistance for faculty members in their own departments—ideally in their own offices. Second, it helps faculty

members more quickly and easily use existing instructional technology tools and techniques. The long-term goal of the program is to make instructional technology use ubiquitous, such that the culture changes within the departments. We hope to see one of two possible results of this program: either faculty culture will adjust so that uses of information technology (IT) are self-sustaining or departments will find the role of a TTSP so vital that they will reallocate existing resources to continue such appointments.

The program selects graduate students from participating departments and trains them to meet discipline-specific needs in their departments by using tools and techniques already in use at UVA. The TTSP program is intended to address the needs of faculty members who may not be using technology in their courses, but who have a lively interest in doing so—in other words, low-level technology users or late adopters. Rather than working in support of one course—as a traditional graduate teaching assistant would—TTSPs are charged with consulting with all faculty in their departments to provide individualized guidance, one-on-one training, and accurate referrals to existing sources of support.

We have seen excellent results thus far, such as individual contact with more than 250 faculty members, dissemination of extant training materials, regular consultation on grassroots projects, advising on departmental upgrades, and most important, a change in faculty members perceptions of options for teaching. We have seen the development of more than a dozen departmentally created faculty-training initiatives and the creation of at least eight similar support positions that utilize graduate students. We have also seen the number of departmentally initiated IT projects skyrocket in TTSP member departments.

More objectively, while we have seen a university wide increase in the use of the university's Instructional Toolkit, in TTSP member departments tool kit use increased 110 percent in their first TTSP year compared with the university average of 77 percent. We have also seen the use of other technologies far exceed that in nonmember departments: Registered course e-mail lists: 42 percent versus 34 percent; course discussion/newsgroups: 5 percent versus 0.3 percent; online distribution of course announcements: 26 percent versus 13 percent; and course link lists to other Web material: 10 percent versus 0.7 percent.

The cost of the project to the institution during the five-year pilot program will be approximately \$500,000 and will affect 500–600 different faculty members. We estimate that the cost per faculty member per year for this program is approximately \$370. **NLII**

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Virginia Tech's Math Emporium: Three Years And Counting

By Ken Hannsgen, Anne Moore and John Rossi, Virginia Tech

THE VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY Math Emporium is a 500-workstation advanced learning community in mathematics staffed by faculty, teaching assistants, and undergraduate peer tutors, who provide one-to-one assistance in more than 20 courses. Since it opened in 1997,

it has served as a site for the advancement of technology-assisted approaches to teaching and learning, with continuous assessment of student performance and of faculty roles and attitudes.

Linear Algebra was the first course in the emporium completely redesigned by the math faculty. The redesign replaces the 40-student multiple-section model with one large course structure. A Web-based resource system comprising interactive tutorials, computation examples, an electronic textbook, and online quizzes increases student feedback and facilitates 24/7 access to course materials.

Redesign has reduced the cost per student from \$77 to \$24, resulting in a projected annual operating cost savings of \$97,400. Those faculty resources have been redirected to advanced mathematics courses, wherein smaller, more intimate student-faculty interaction is a requirement.

When comparing student performance in 1996 before course redesign with the years following, we see roughly stable performance. Completion rates have remained much the same, at approximately 98%, while retention rates (finishing with a grade of C or above) have increased slightly from 69% before redesign (1996) to 76% in 1998 and 71% in 1999.

At the NLII meeting in January, aspects of

daily life for more than 7,000 students per semester and approximately 60 faculty who form the Math Emporium's learning community were described.

Assessment. The main assessment data for Linear Algebra come from the final exam and course grades. In addition, opinion surveys, student focus groups, and interviews with staff are used.

**REDESIGN REDUCED THE COST
PER STUDENT RESULTING IN A
PROJECTED ANNUAL OPERATING
COST SAVINGS OF \$97,400.**

All students take a common final exam in multiple-choice format. Questions are coded according to a list of course goals and difficulty levels, and a two-person team reviews the results each semester. The team decides whether each goal covered on the exam has been "well met" (W), "met" (M), or "not met" (N), and the report is used by the course designers as a guide for changes in the syllabus or materials. For fall 1999, the questions yielded 15 W, 6 M, and 4 N outcomes. For spring 2000, the results were 13 W, 6 M, and 6 N. In both cases, the reviewers concluded that the overall scores—67 percent and 69 percent correct for fall and spring, respectively—

were reasonable for these tests.

Course enrollment and grade statistics have been steady from year to year and consistent with those of the last traditional year. The general conclusion is that the revised course has yielded roughly stable performance, with some increase in retention.

Assessment also includes surveys of student opinion. Web-based surveys were given in Math 1114 at the beginning and end of the fall semesters in 1999 and 2000. The surveys are long and participation rates are higher than 90 percent.

Costs. The cost per student under the traditional format was \$76.61. Total cost savings for academic year 1999–2000 came to \$73,282. With just one instructor handling all of the students, operating costs for fall 2000 reached the level of \$24 per student.

The principal capital-for-labor substitution behind these numbers is the use of software for delivering content via Web-based presentations in place of parallel lecture sections. Some skill building occurs in the online quizzes and now in the more interactive version of the presentations. Video solutions to homework problems provide another important capital item that replaces office hours and some class time.

At this stage, math faculty have not realized capital-for-labor substitutions in mentoring or in facilitating student interaction. The peer tutors available at the Math Emporium have provided important assistance at low cost.

Finally, emporium faculty note that versions of the redesigned course could be transferred to other settings. Though the Math Emporium works well at Virginia Tech, the course could be run by a smaller facility or online. In addition, the math department offers a distance-learning version of a course taught in the emporium and that uses proctoring centers for tests and that has already built up an audience of 30 to 40 students across Virginia each summer. **NLI**

Java in Administration

By Carl Jacobson, Director, MIS, University of Delaware

THE JAVA IN ADMINISTRATION—SPECIAL INTEREST GROUP (JA-SIG) is an independent organization designed to increase the flow of information between educational institutions and companies involved in the development of

administrative applications using Java technology. Today, with the advent of component-based technologies, we have a great opportunity in higher education to do things better as colleagues.


The purpose of JA-SIG is first, to share

our experiences as we build applications with Java, and second, to develop a common infrastructure upon which we can build sharable components.

The JA-SIG membership is engaged in three activities. The first is the sponsor-

ship of a twice-annual conference. The conference, having two technical tracks and one management track, is held in the east during the winter and in the west during the summer.

The second activity, the JA-SIG Clearinghouse, is a place on the Web to facilitate the sharing of Java components. The third JA-SIG activity is the development of a free, open-source, open-standards portal for higher education: uPortal.

The uPortal collaborative has received a grant from the Mellon Foundation to complete version 2.0 of the open-source software and to package this release as a turnkey package for any institution of higher education. For more information, see www.jasig.org. 

TWELVE CAMPUS CONDITIONS FOR TRANSFORMATION

THESE TWELVE CONDITIONS are indicative of the institutional characteristics that are essential to effective action in the knowledge-based economy in which higher education now operates. Coupled with decision-making tools such as the Conceptual Framework for Distributed Education and the Institutional Readiness Topology (www.educause.edu/ready/), these conditions provide the basis for informed, realistic, and viable decisions.

Choices – Identifying a strategic direction and selecting a path to get there based on a clear sense of institutional mission

Commitment – Allocating resources and aligning policy to enable the institution to adjust its course and to follow the path selected

Courage – Providing visible and focused leadership from the very highest level of administration

Communication – Building a climate of trust by including the entire campus community in the transformation

process through a carefully conceived and well executed strategy for consultation (conversation and critical discussion), and for dissemination of information about extant and emerging services, plans, decisions, etc.

Cooperation – Collaborating across functions and throughout levels and constituencies to achieve a consistent and integrated set of support services for teaching and learning

Community – Complementing the community of support nurtured through cross-functional collaboration with an equally cohesive community of

faculty across disciplines, and creating an engaged community of learners

Curriculum – Reconceptualizing the curriculum to reflect its distributed, interdisciplinary, and outcomes-oriented nature

Consistency – Reflecting institutional commitment to transformation through consistent action and acknowledging the importance of standards, both within the technology industry and the institution; aligning organizational rhetoric to support and reinforce transformative behavior

Capacity/Competency – Developing "the teaching and learning capacity of the institution (e.g., curriculum and faculty) to serve student achievement and outcomes" (p.3 CHEA Report, August 2000) and using intelligent assessment to drive transformation

by defining and evaluating institutional success in terms of student achievement and outcomes

Complexity/Confusion – Overcoming the confusion associated with coping with transformation by adapting to the inherent complexity of the decision-making process by adopting more agile and responsive governance processes

Culture/Context – Understanding the culture, values, and sensitivities of a given campus climate

Creativity – Developing strategies and tactics that harmonize with the campus culture and context and recognizing that this is a creative, and a political, process

*National Learning Infrastructure Initiative
(NLI) Focus Sessions
September 2000*

Enabling Transformation

Reducing risk through real-time research

EDUCAUSE ESTABLISHES CENTER FOR APPLIED RESEARCH

In October, EDUCAUSE launched its Center for Applied Research (ECAR) under the leadership of EDUCAUSE vice president Richard N. Katz. The center will assemble leading scholars and researchers whose efforts have focused on issues related to the changes being brought about in higher education by the introduction of new information technologies. Diana G. Obglinger has been appointed Senior Fellow of the Center to serve in a part-time consulting capacity to further the effort.


For more information, see
http://www.educause.edu/ctr_research.html

AS INFORMATION TECHNOLOGIES ASSUME A PLACE NEAR HIGHER education's center stage, the stakes associated with the management and use of information technologies, services, and resources are growing in importance and consequence.

Decisions regarding the choice of platforms are increasingly risky, technology expertise is increasingly scarce and expensive, and the organizational and cultural impacts of information technology (IT) decisions are increasingly wrenching.

In late 2000, those observations suggested to the leadership of EDUCAUSE the need to create a body of applied research that could be developed and delivered in urgent time frames to supply higher education decision makers with unbiased and thorough analysis of IT issues of great consequence. EDUCAUSE vice president Richard N. Katz discussed the EDUCAUSE Center for Applied Research (ECAR) at a featured session at the NLII meeting in January. "EDUCAUSE has for years earned a great reputation as a knowledgeable and honest broker among and between campuses, businesses, and government authorities," said Katz, who will serve as ECAR's founding director. "This reputation situates EDUCAUSE uniquely as an organization

that can effectively marry knowledge about the IT issues that are pressing the leaders of our educational institutions with access to scholars, content experts, and research partners who can develop deep and actionable research and analysis in those areas of defined need."

In mid 2001, EDUCAUSE will solicit subscribers to ECAR, whose mission is to foster better decisions by developing and disseminating credible and timely applied research in areas critical to EDUCAUSE members. ECAR will be financed in part through the sales and subscriptions of its research products. Subscribers will join corporate and philanthropic sponsors in creating a new body of knowledge to support leaders throughout higher education. Key EDUCAUSE initiatives, such as the NLII, will participate in setting the research agenda and priorities of ECAR. Inquiries about ECAR can be directed to Vice President Katz at katz@educause.edu. 

Find complete NLII meeting information online at

<http://www.educause.edu/nlII/meetings/orleans2001>



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