

**U
P
D
A
T
E**

On Research and Leadership



**Special Issue on
Learning Technologies and the Future
of the Community College**

The Illinois Century Network: New Dimensions for Education in Illinois by Cheri Rich	2
Illinois On-Line Network by Burks Oakley II, Charles V. Evans, and Lynn E. Halpern Ward	3
Community College Leadership Cohort to Begin Summer 1998 at UIUC	4
Developing On-Line Courses: Perspectives from Four Illinois Colleges	5
Community Colleges and the Internet: Uses and Impacts by James D. Layton	11
Academic and Occupational Integration and Learning Technologies by Illinois Integration Task Force	14
On-Line Resources by Bruce Scism	14

*Office of Community College
Research and Leadership*
University of Illinois at Urbana-Champaign

Vol. 9, No. 1
Fall, 1997

347 College of Education
1310 S. 6th St. Champaign, IL 61820
Phone: 217-333-0807 Fax: 217-244-5632
E-Mail: d-bragg1@uiuc.edu WWW: <http://hre.ed.uiuc.edu/occl>

To Our Readers

This issue of Update examines the integration of Internet technologies with course delivery. The two lead articles describe current efforts to bring new technology to the community college classroom. Cheri Rich summarizes the status and recommendations of the Higher Education Task Force's report to the IBHE. Oakley, Evans, and Ward describe the Illinois On-Line Network, a cooperative effort between UIUC and ten community colleges to provide necessary skills and support to deliver courses over the Internet. Four perspectives are presented from Parkland, Sauk Valley, Elgin, and Kaskaskia, describing their efforts, focusing on their difficulties and future needs, and providing some direction for similar efforts at other institutions around the state. James Layton examines the utilization of new technologies and the impact at the community college. His research challenges the "headlong rush" toward adoption of this technology, and argues that alternatives should be given full analysis before being discarded. Also read about the upcoming Cohort in Community College Leadership (Summer, 1998), and On-Line References for help using Internet software and course development.

See OCCRL's website at <http://hre.ed.uiuc.edu/occl> for unedited articles and other resources.

OCCRL was established in 1989 at the UIUC. *Our mission is to provide research, leadership, and service to community college leaders and assist in improving the quality of vocational-technical education in the Illinois community college system.* The Office is supported by the Illinois State Board of Education, Business, Community and Family Partnerships Center, with funding from the Carl D. Perkins Vocational and Applied Technology Education Act of 1990.

Staff

Debra D. Bragg, Ph.D., Update
Editor and Director, OCCRL and Associate Professor, UIUC
Bruce Scism, Guest Editor, Research
Assistant, UIUC
William Reger IV, Ph.D., Update
Managing Editor and Administrative Assistant, UIUC

The Illinois Century Network: New Dimensions for Education in Illinois

by Cheri Rich, Lake Land College and UIUC

The Higher Education Task Force's report to the Illinois Board of Higher Education (IBHE), *The Illinois Century Network (ICN): New Dimensions for Education in Illinois*, argues that Illinois has the opportunity to build an educational delivery system that removes the barriers of distance, location, and time for its citizens, or Illinois can become "a net importer of educational services in an emerging global market." Other states such as Wisconsin and Pennsylvania and other organizations such as the Western Governor's Association have also recognized the need for new educational/training and delivery systems.

Connections or Cooperation

According to the Task Force's report, the ICN would connect Illinois higher education institutions "to elementary and secondary education institutions, public libraries, hospitals, governments, government agencies, industry, corporations, small businesses, and individual citizens." The proposed network calls for a high capacity (155-622 Mbps.) backbone, campus connections (45-155 Mbps.), and campus infrastructure. In order to maximize existing state investments, avoid duplication, and enhance cooperative efforts, it was recommended that the ICN incorporate the existing higher education video

*Access to the technology we need
will not come cheaply, but the cost
of not moving forward will be
higher in the long-term.*

network and develop, in cooperation with other state projects being designed by the Illinois State Board of Education (ISBE), the State Library, The University of Illinois Cooperative Extension Service, the Illinois Library Computer Systems Organization, and Central Management Services. Also, a statewide network is proposed to ensure that institutions in isolated or sparsely populated areas of the state have the same opportunity to receive the necessary bandwidth at an affordable cost as do their urban counterparts.

Project Costs of the Network

Estimated costs associated with the ICN include \$109 million in capital costs for each of the first three years of the project and \$39 million in years four and five for a total of \$405 million. Capital costs include the backbone, the campus connections to the backbone, and campus networking equipment for the public institutions. Operating costs for the project are estimated to be \$14.5 million in the first year; \$22 million, second year; and \$29.5 million, subsequent years. These operating costs would include the managing of the backbone and its connections as well as recurring costs for "network support staff, for personal computer support, and for content development expert staff." Illinois also needs to consider training costs, the start-up and ongoing costs of support and

Continued on Page 15

Illinois On-Line Network

by Burks Oakley II, Charles V. Evans, and Lynn E. Halpern Ward, University of Illinois

The Illinois On-Line Network (ION) is a collaborative effort between ten Illinois community colleges (Belleville Area, Black Hawk, Elgin, Highland, John Wood, Lake County, Lake Land, Sauk Valley, Shawnee, and Waubensee) and the University of Illinois. The goal of this initiative is to raise institutional capacity to develop, deliver and support on-line, Internet-based programming for higher education in the State of Illinois.

It is no longer a question of whether the Internet has a role to play within the higher education community, but rather a question of how to use Internet-based technologies most effectively and appropriately.

The exponential growth of the Internet and the World Wide Web has greatly increased the capacity for communication and the availability of information on-line, and has begun to change fundamentally the way that people learn and interact. It is no longer a question of whether the Internet has a role to play within the higher education community, but rather a question of how to use Internet-based technologies most effectively and appropriately. The goal of the ION is to nurture meaningful program development that will lead to quality learning opportunities.

The University of Illinois and Illinois' community colleges have a long history of providing educational and public service programming to the citizens of Illinois. Illinois'

community colleges have worked unceasingly to remove barriers to full educational access for citizens within their purview. The remaining barriers of place and time can now be bridged through the thoughtful use of networked technologies such as web-based conferencing software, real time delivery of audio, textual and graphic information, and simulation software. These learning technologies and many others have been adopted by hundreds of faculty across the country.

On-Line Learning Communities

If Illinois is to prepare its citizens to thrive in coming years, it must create effective, on-line learning communities. While sound instructional design will form the basis of quality on-line learning experiences, equally important in determining the ultimate benefit to participants will be issues of faculty and student training, access, technical infrastructure, and student support. The primary goal of the ION is thus to prepare Illinois' community colleges, their faculty and staff, for the effective utilization of networked information technologies.

The goals of the ION include:

- Shared instructional design and technical assistance
- Community College/University collaboration in the creation of on-line course materials
- Identification and sharing of best practices
- Evaluation of effort and dissemination of findings

Specific tasks to be accomplished through this initiative include:

- Meaningful collaboration among a significant sector of Illinois' higher education community
- Identification of appropriate technical and student support systems
- Regional and statewide workshops

- On-site and on-line training, consulting, and troubleshooting
- Support of public access sites for on-line programming

Equally important in determining the ultimate benefit to participants will be issues of faculty and student training, access, technical infrastructure, and student support.

Developmental Support

All of these goals will be met through collaboration between the participating community colleges and the University of Illinois. Regional, on-site workshops will be organized to present the latest developments in on-line programming and to provide faculty with opportunities to create on-line course materials. These workshops will be tailored both to the needs of faculty with some experience in utilizing networked technologies and those just beginning to recast their programming into on-line formats. Workshops will be presented in various geographical regions of the state. Additionally, ION technical support staff will be available for both on-site and on-line consultation.

A residential summer workshop for community college faculty and technical staff on the campus of the University of Illinois at Urbana-Champaign will allow interaction between community college faculties and University of Illinois faculty and staff who have already created on-line programming.

Continued on Page 15

Community College Leadership Cohort to Begin Summer 1998 at UIUC

UIUC is currently recruiting a new cohort of students for a Community College Leadership (CCL) doctoral program, specifically designed for aspiring community college presidents, vice presidents, deans, and other administrative personnel.

New visionary leadership will be essential to continuing the strong tradition of community college education that we know in Illinois, a tradition built since the mid-20th Century. The College of Education at the University of Illinois at Urbana-Champaign (UIUC) is committed to working with the Illinois community college system to support Illinois' excellent tradition of community college education.

Utilizing the expertise of UIUC's own graduates and other key state leaders, UIUC is committed to beginning an executive CCL cohort in the Summer of 1998. Community college administrators, faculty and support personnel are encouraged to apply. To ensure that the community college of the future is increasingly reflective of its diverse student population, applications from persons affiliated with under-represented groups are highly encouraged.

Key Features of the Curriculum

The graduate program will involve course work over a period from Summer 1998 to Fall 2001 and a dissertation. The program results in the awarding of the Doctorate of Education (Ed.D.). For students who wish to commit to full-time study, a research-oriented Doctorate of Philosophy (Ph.D.) option is available.

The CCL cohort will begin graduate study on the UIUC campus in May-June, 1998. The "cohort" format was chosen deliberately to meet the needs of working professionals who aspire

to future community college leadership positions, but who cannot participate in graduate studies on a full-time basis. Using the notion of learning communities, the cohort will feature weekend instruction (typically five weekends per semester per graduate course), collaborative teaching and learning,

Using the notion of learning communities, the cohort will feature weekend instruction, collaborative teaching and learning, administrative intern-ships, and seminars featuring local, state, and national leaders.

administrative internships, and seminars featuring local, state, and national leaders. (For additional information about the program, go to the homepage of the Office of Community College Research and Leadership at <http://hre.ed.uiuc.edu/occr/> where a copy of the strategic plan and other supporting documents appear.)

Customized Format

A distinguishing feature of the program is that students can remain employed full-time while pursuing the doctoral degree. The customized weekend and summer format is designed to encourage continuous engagement of practice with research and theory to develop essential leadership skills, knowledge and perspectives. The use of educational technologies is planned to enhance classroom instruction.

Sixteen courses relevant to the diverse needs of future community

college leaders are anticipated. Selected courses include:

- The Community College
- Community College Teaching and Learning
- Advancements in Educational Technologies
- Community College Policy and Program Development
- Organizational Theory and Administrative Leadership
- Financial Administration
- Personnel Administration
- Program Evaluation
- Qualitative Research

In addition to these courses, during the second year of the program students will participate in a Community College Administrative Internship. In the third year they will be involved in a Community College Leadership Seminar. These special leadership development experiences are designed to engage students in an on-going dialogue about issues and concerns facing community college education in the future.

Approximately twenty faculty from the College of Education are committed to working closely with students as teachers, advisors, and mentors in the program.

Applications will be accepted until February 15, 1998 with decisions about admissions scheduled no later than April 1, 1998.

For more information and application materials contact:
Debra D. Bragg, Co-Coordinator
James G. Ward, Co-Coordinator
Community College Leadership Cohort Program, UIUC
College of Education
1310 South Sixth Street
Champaign, IL 61820
(217) 244-4260

Developing On-Line Courses: Practical Perspectives from Four Illinois Colleges

Sauk Valley Community College: Expanding Students' Educational Experience—Integrating Instructional Technology

By Philip E. Gover, Alan Pfeifer, Kris Murray, Sauk Valley Community College

During the 1996-97 school year, Sauk Valley Community College began to see the fruits of presidential leadership. The Board of Trustees approved an administrative reorganization that positioned the information systems area under the instructional services umbrella. They then followed this move with a commitment of 1.6 million dollars (over five years) to upgrade both institutional and instructional computing. Thus the stage was set for the emergence of an aggressive instructional technology policy as expressed in the following areas of development:

1. Creation of an Instructional Technology Center
2. Increased use of technology in the classroom
3. Collaborative efforts with other community colleges and four-year schools
4. Creation of Internet courses

Instructional Technology Center

Sauk Valley's vision for the Instructional Technology Center (ITC) is to provide the stimulus and foundation support for faculty who desire to incorporate instructional technologies into the teaching/learning process.

The initial success of the ITC was its involvement and encouragement of Sauk Valley faculty. Faculty were involved in the selection of state-of-the-art PC and Macintosh equipment along with a variety of suitable peripherals. Also, because Sauk Valley has seen the benefits of creating faculty mentors, it is actively pursuing the creation of key faculty members knowledgeable in the use of

both general and discipline specific tools.

Sauk Valley also adopted a five-year plan to replace computers in full-time faculty offices and connect them to the College infrastructure that includes the Internet and Sauk Valley's Intranet. The placement of

Sauk Valley provides encouragement, facilities, equipment, and training to faculty members interested in using the Internet as either a resource site for course work or as a primary source of course materials and assessment.

these machines aided integrated technology-based instruction at Sauk Valley because faculty feel less intimidated working on their own with one-to-one instruction in their offices. The success of this program has also created a greater demand on the services of the ITC as the faculty continue to use its equipment and services to create web and classroom-based material. The ITC also offers group seminars on word processing, spreadsheet, presentation graphics, Internet, Office and ITC hardware use,

for faculty and staff both within and across disciplines.

The addition of equipment and software tools means both additional hardware and software support. The availability of the College LAN (local area network) and servers both Intranet and Internet are critical to the instructional process. Therefore, a downside to the integration of technology and web-based instruction could be the additional cost for support. In order to supply uninterrupted access to faculty and students, serious integration of technology into the educational process requires an investment in backup servers, systems, communication lines, and technology support staff.

Asynchronous learning means that learners will need technical assistance on a 24x7 (24 hours per day, 7 days per week) basis. Learners may have problems with the software on their computer and with dialing their local Internet service provider. These "help desk" questions will become part of the responsibility of the institution when it impedes access and thus learning by the enrollee. Server access and support must be available on that basis as well.

Technology in the Classroom

Additional opportunities for using technology in the classroom created by the ITC has increased demands on the technical support staff. The faculty using the ITC have found that the amount of time invested in preparing to use technology in the classroom was much greater than preparation time for traditional teaching—a natural consequence of

having to learn the software as well as use it to create presentations. Tools needed by faculty in order to use computer-based technologies require equipping classrooms with user-friendly equipment. At present, however, equipment must move from room to room as needed (often showing up five minutes before class) and is not necessarily the same brand or format from one use to another. Following the standard audio-visual paradigm of mobile overhead projectors and VCR units being shared among faculty may be necessary, but not recommended by faculty. Sauk Valley is in the midst of equipping eight classrooms with computers, projectors, white boards, audio systems, as well as laser disc players. Most faculty acknowledge this initiative as a move in the right direction, and see it as an indication of the administration's commitment to the integration of computer-based technology into education.

Collaboration

Sauk Valley Community College, like similar institutions, does not have sufficient staff and funding to support significant instructional technology enhancements independently. It is, therefore, imperative to cultivate and develop collaborative initiatives with other colleges and universities which share similar outcome objectives.

Among Sauk Valley's collaborative efforts is a cooperative agreement with the University of Illinois to offer NetMath to high school and adult students. This alliance has been extended through Sauk Valley's participation in a consortium with the University of Illinois and nine other Illinois community colleges that recently received a HECA grant to fund equipment and expertise for expanding their presence on the Internet. This relationship is expected to produce opportunities for staff development, access to further technologies, and the creation of and access to Internet courses and additional educational alternatives for students.

Sauk Valley is an active member of the Western Illinois Education Consortium (WIEC) which was designed to provide educational opportunities for under-served citizens in the region between the Wisconsin border and Quincy, Illinois. Sauk Valley hopes that the mission of WIEC will expand from the simple delivery of interactive audio-video transmissions to more advanced instructional technology delivery systems as they develop. Collaboration with the WIEC will increase the availability of resources at our disposal.

To participate in this new learning medium community colleges will need to dedicate resources and appropriate funding in order to support faculty and enable learners to succeed.

Sauk Valley provides encouragement, facilities, equipment, and training to faculty members interested in using the Internet as either a resource site for course work or as a primary source of course materials and assessment.

Humanities 210 Trial Run

During the summer of 1997, an Internet version of Humanities 210 (Man and the Arts) was given a trial run. Two students participating in a program for gifted high school juniors and seniors found that time conflicts prevented them from attending Humanities 210 in the classroom along with their cohort. The administration, the instructor who designed the course, the technical support staff, and the students, decided collectively to allow the students to take the Internet version of the course, even though the course

was not officially scheduled to begin until the Fall semester. The Internet version of Humanities 210 includes:

- material on web pages and links to supplementary material that are the equivalent of in-class lectures and audio-visual presentations;
- synchronous/asynchronous communication through MOO and COW that are equivalent to office hours, class discussion, and all other communication between teacher and learners;
- assignments that take the student to the library or other sources for research.

The students did extremely well in the course. One even submitted his assignments as web pages, a definite extra effort on his part. The writing skills of both students improved through their continuous written conversations with the teacher on topics related to the course. Their performance, however, was anomalous to the general Sauk Valley student population. The course instructor and the technical support staff will launch a study over the next four semesters to shed some light on what cognitive traits and minimum levels of computer literacy are necessary for success and should be required of prospective Internet students.

To participate in this new learning medium community colleges will need to dedicate resources and appropriate funding in order to support faculty and enable learners to succeed. Sauk Valley's experiences make it clear that a participation in technology-based education must involve a shared vision of the entire institution—board of trustees, administration, faculty, and staff.

For more information, contact Dr. Phillip E. Gover, Vice President of Instructional Services, Alan Pfeifer, Director of Computing and Instructional Technology, or Kris Murray, Instructor of Humanities, at 815-288-5511 or goverp@svcc.edu, pfeifer@svcc.edu, murray@svcc.edu.

Parkland College: Internet Courses—A New Frontier in Distributed Learning

By Michael J. Miller, Darrin L. Cheney, Parkland College

Postcard from a Student

Dear Professor Gordon, I'm writing to tell you how much I appreciated the time and effort you put into making your English Composition course such a great experience. As the result of taking your course, I have just received a promotion at work. I'm still doing the swing shift, but the extra income will allow me to have a baby-sitter at home for my kids while I'm at work. Not only did your course help me learn how to write better, but I also think that my computer skills have improved a lot. Thank you again for a great learning experience. I enjoyed getting to know you and hope I will have a chance to take another class with you. ~ Sarah

Sarah and Professor Gordon never met face-to-face. Their entire teacher-learner relationship developed via an Internet course and networked communication. Sarah valued her Internet course as authentic learning that advanced her educational and career goals.

This anecdote illustrates some intriguing aspects of the "on-line frontier" that community colleges explore as they create new learning communities in cyberspace. Parkland's initial experience working with faculty to develop Internet courses suggests that sociology rather than technology is at the heart of the enterprise. The Internet functions well as a channel for delivering instruction; more importantly, it creates an arena for developing meaningful human relationships between teachers and learners. Keeping the human dimension in the foreground of mediated instruction is crucial to shaping on-line learning communities that will be gratifying for both students and faculty.

The Human Dimension of On-Line Instruction

Community colleges pride themselves on personalized instruction and their ability to create supportive learning environments for students. In a new twist on the old "commuter college" motif, the Internet and networked learning allows Parkland to "commute to our students." The Internet and other forms of distributed learning will enable the college to strengthen its commitment to providing flexible educational opportunities. Parkland College's success hinges on re-imagining how it can fulfill its historical commitment to serving learners. Community college leaders must effectively communicate how technology extends and builds upon the community college's foundational mission.

New Internet Courses at Parkland College

Parkland College began developing Internet courses in the Summer of 1996.

- An initial pilot project provided release time for two faculty to create courses with assistance from a web specialist, and a instructional designer/media producer in the Department of Academic Technologies.
- Existing lecture and course assignments were redesigned and converted to HTML formats, then uploaded to a campus web server.
- Text files, graphics, and links to other Internet resources were combined in the on-line "classroom."
- Teachers and students use both e-mail and FirstClass, a conferencing program, for class

discussion and small group activities.

- Students can access the courses using any web browser via campus computer labs or their home PCs.

Keeping the human dimension in the foreground of mediated instruction is crucial to shaping on-line learning communities that will be gratifying for both students and faculty.

Building upon the release time model, our Internet curriculum has increased to eleven courses within a year. Parkland's students can now enroll for on-line courses in English Composition, Speech, Sociology, Chemistry, and Sports Psychology. On-line courses are accepted by the Curriculum Council as equivalent to traditional classroom courses. Other Internet courses are in the works, and Parkland is beginning to consider developing a "Virtual College" component as the next logical step in extending its current menu of cyberspace offerings.

Lessons Learned from the Pilot Project

Planning and Support. Custom course development requires time, planning, and design assistance. Faculty are subject specialists, but need support in translating objectives

and materials to an Internet delivery system.

Faculty Training. Faculty need to acquire instructional design and computer competencies in order to design and manage an Internet course. These skills are an extension of existing teaching methods, but to acquire them the faculty initially

The main barrier community college students face is not distance, but time. Internet courses allow students to accelerate progress toward their educational goals by "time-shifting" schoolwork at their convenience.

experience the process as labor-intensive and challenging. Faculty typically enjoy a privileged role that derives from their scholarly expertise, but must rely on those with computing and technical know-how. Creative technologists have design skills but do not always appreciate faculty concerns about technology which, for them, can sometimes be new and uncomfortable territory. Technical support staff need to assist faculty who may not be comfortable with team-based collaboration and more technical course design in activities such as curriculum development, web page design, and beta-testing of on-line courses. Since Internet courses reside on a web server, they require knowledgeable technical staff to make sure everything is working properly.

Student Training. Students also need certain basic computer competencies

in order to succeed in an Internet course. Whether the community college creates formal entry requirements for on-line courses or admits students regardless of their computer skills, it will need to consider student training and support issues.

Changes in the Learning Environment

Exploring the use of the Internet for instruction has compelled Parkland College to reexamine how it designs effective instruction, serves students, and manages the changing roles of teachers and support professionals.

Changes in Faculty. Networked communication largely replaces face-to-face interaction between teachers and students. Classroom lectures are placed on web servers as HTML files and interactive discussion lists, which means that traditional class preparation followed by "live" lectures is replaced by the "front-loaded" preparation of on-line materials and design of a cyberspace classroom. Faculty lecture time is shifted into managing e-mail communications and discussions on-line, most of which occur asynchronously.

Changes in Course Development. Developing Internet courses requires designing an entire learning environment. The on-line "virtual classroom" has to be constructed consciously to make it a "space" conducive to teaching and learning. Many faculty initially experience this as constraining because they value the spontaneity of classroom interaction.

Changes in Students. The main barrier community college students face is not distance, but time. Internet courses allow students to accelerate progress toward their educational goals by time-shifting schoolwork at their convenience. Learners value the ability to log on at

midnight or at 5:00 AM, often the only times they have to focus on academic work, and they are willing to make the effort if community colleges can provide access to quality instruction around the clock.

Real Costs and Resources

Skilled personnel, reliable technology, robust network infrastructure, integrated student services, and meaningful faculty incentives are among the key ingredients required. While it is certainly possible to economize in some areas, community colleges are best advised to anticipate the real costs of developing Internet curriculum.

The on-line "virtual classroom" has to be constructed consciously to make it a "space" conducive to teaching and learning.

College administrations should work through policy and management issues before launching into an ambitious Internet curriculum project. Issues related to faculty compensation, course load, enrollment caps, student support services, development time, and technical infrastructure must be anticipated. Providing quality on-line instruction that meets the needs of "working learners" means that community colleges will have to employ technological tools to create effective teaching and learning environments. The future will be created by educators who can "learn by design."

For more information contact Dr. Michael J. Miller, Dean of Academic Technologies, or Darrin Cheney, Coordinator, Instructional Technology and Distance Education at 217-373-3893, or mmiller@parkland.cc.il.us or dcheney@parkland.cc.il.us

Kaskaskia College: Internet Challenges

by Janet Gardner, Kaskaskia College

Kaskaskia College's main campus achieved Internet connectivity in 1995. Internet connectivity has been a catalyst for change in the acquisition and dissemination of information and in the instructional strategies employed by faculty. When Internet connectivity was achieved, the library immediately made use of the Internet for interlibrary loan and reference resources via Telnet, and for delivery of ProQuest Direct's Periodical Abstracts II database, an index to periodicals with full-text availability, replacing the CD-ROM version.

The demand for more sophisticated training and technical support for faculty and staff and for information literacy instruction for students will increase.

A college committee was established to develop a home page, employing a student to design and maintain it. The college continued to add information to its web site which underscored the need for a designated web master to assist with the design and development of the web pages. When the Media Center Technician position became vacant last spring, the responsibilities of the position were revised to include the web master function.

The original Home Page Committee has evolved into an Internet Resources Committee (IRC) chaired by the librarian with key membership representing student services, instruction, information technology services, and marketing. The IRC recently developed procedures and standards for the college web site to provide guidelines and to ensure the

same high standards as other forms of published information. The procedures and standards address information created for public pages advertised and linked from the home page and for pages linked to the web server with access limited to those who need it. The guidelines provide some parameters for institutional utilization of an evolving technology and will need to be reviewed and revised frequently.

With Internet access e-mail usage has increased internal and external information dissemination and communication. In courses such as English composition and literature, faculty and students use e-mail to communicate and exchange assignments. There are staff complaints about the time-consuming task of reading and responding to e-mail, and this concern is becoming more prevalent among e-mail users at the college.

Faculty Training

Internet access also serves as a catalyst for change in the instructional arena. As faculty increase their knowledge and skills in the utilization of the Internet, they require student usage for acquisition of course requirements, course materials, and research assignments.

Faculty are at various stages of growth in their understanding and utilization of Internet technology. Many faculty have attended workshops, seminars, and conferences to increase their knowledge and ability to incorporate Internet technology in the delivery of instruction.

A unique opportunity for training in multimedia and instructional technology is afforded Kaskaskia College faculty and teaching faculty at ten other community colleges and universities as members of the Southwestern Illinois Higher Education Consortium (SIHEC) and the Southern Illinois Collegiate Common Market (SICCM) through

the Regional Center for Distance Learning and Multimedia Development located in Morris Library at Southern Illinois University at Carbondale.

The Regional Center assists teaching faculty in adapting curriculum to technology and to the unique aspects of interactive video (distance learning) classrooms. One-day workshops are scheduled frequently on topics such as: WWW using Netscape, construction of WWW pages, instructional applications of the WWW, information literacy overview, and advanced HyperText markup Language (HTML). Also, the expertise of the Regional Center staff is available to faculty on an individual basis.

Mini-Grant Program

Last spring, the Regional Center initiated a mini-grant program to encourage faculty of SIHEC and SICCM member institutions to apply for funding of up to \$1,000 per mini-grant to assist in the development of distance learning, multimedia, and web-based instructional products. Funding was awarded for development of innovative course materials, enhancement of existing course materials, and conversion of course materials for distance learning.

Two Kaskaskia College faculty were awarded mini-grants for the development of web-based instructional materials in music and in anatomy and physiology courses. The impact of the mini-grant program extended well beyond the two recipients and the instructional programs in which they teach.

Presentations and demonstrations of mini-grant activities by the college faculty and of other web-based instructional applications (including course requirements and assignments, supplementary course materials, lecture notes, unit outlines, tests, and entire courses) by Regional Center staff at the August faculty workshop

generated a high level of interest and enthusiasm among other faculty. These web-based instructional applications illustrated to faculty that they can begin with one specific application and progress in manageable steps.

In addition, faculty became more aware of the training opportunities and technical support readily available to them at the college and at the Regional Center. In developing applications, they would not be left to struggle on their own until the next scheduled workshop. As a result, faculty have sought individual assistance at the college and have turned to the Regional Center for training and for advice in solving special problems.

Student Preparation

Of equal importance to faculty and staff training are training and instruction for students. The results of a questionnaire distributed this semester during freshman library orientation indicated that student Internet skills cannot be assumed. Of the 486 students surveyed, 28% had not heard of the Internet or had not used it; 24% had used it but found it confusing; 27% had used it but wanted to improve their searching techniques. Only 21% of the students had used the Internet and felt comfortable with it.

Information Literacy Course

Students' limited Internet skills reinforce the need for information literacy training for students. The development of an information literacy course emphasizing the basic skills to utilize the electronic information network and to evaluate retrieved information critically is necessary. Currently in the draft stage, this course includes the following topics:

- Creation and transmission of information (both popular and scholarly)
- Structure of information (subject classification, subject headings, database record structure, etc.)

- Construction, application, and revision of a search strategy
- Access to information (reference sources, periodical indexes, on-line databases, World Wide Web)
- Electronic searching concepts (Boolean searching, field searching, controlled vocabulary)
- Use and structure of information among different academic disciplines
- Evaluation of information

The focus on the teaching and learning process and the utilization of technology as tools to enhance teaching and learning must be maintained.

To demonstrate and apply course concepts, a variety of electronic resources will be used including:

- On-line library catalog
- Periodical indexes on CD-ROM and on the WWW
- Full-text databases on CD-ROM and on the WWW
- Internet resources

The course will be offered in conjunction with existing student opportunities to learn and hone research skills through library orientation sessions, research sessions related to specific disciplines, individual research assistance, and research skills components incorporated in various courses. The emphasis on information literacy is one of the ways in which the college is addressing what seem to be the driving questions for education in the 21st century: What does it mean "to know"? Is "knowing" what we have in our heads or how well we are skilled to explore the infosphere?

Although much progress is evident at Kaskaskia College in the development

Continued on page 11

Elgin Community College: Training Faculty for the Internet

by Althea W. Stevens, Elgin Community College

Internet courses are becoming more prevalent, but these days one does not need to know HTML code in order to create an Internet course. MS Word (Office 97) provides a web development module that makes the development process a breeze.

Tools very often remain untouched if the recipient of these instruments is afraid to experiment or, worse yet, experiments, fumbles, but cannot discover where the problem lies. The saying that "a better educated society makes for a better workforce" applies to technology in education, i. e., a faculty trained in current technology makes for a more creative dispensing of knowledge.

Nevertheless, faculty need training for the implementation of technology in the development of their curriculum. How many instructors place a course on the server, update their course, or create special folders? How many are able to test the product before it is placed on the file server? Providing a test site will allow instructors to test a finished product—a Web page or even a partial presentation of a course—before posting it on-line for students. A test site provides the opportunity to experiment in the presentation of a course. Training is the key.

For further information, contact Dr. Althea W. Stevens, Assoc. Dean of Distance Learning and Instructional Technology at 847-697-1000 ext. 7565 or astevens@mail.elgin.cc.il.us.

Gardner, continued from page 10

and utilization of Internet technology, many challenges remain:

- Planning and allocation of sufficient resources are necessary to meet the demand for more sophisticated training and technical support for faculty and staff and for information literacy instruction among students.
- Internet connectivity and/or Internet access at college extension sites and at business and industry instructional sites in the college district must be addressed.
- Frequent upgrades of Internet system hardware and software will be needed.
- Sufficient technical staff to maintain and expand a reliable, robust network and to provide technical support to faculty and staff will be needed.
- The focus on the teaching and learning process and the utilization of technology as tools to enhance teaching and learning must be maintained.

As educational institutions move from the teacher-centered classroom to a distributed learning environment, Internet technology is the vehicle for instruction, for information retrieval, and for interaction with fellow students and instructors. Ultimately the greatest challenge for all of us is adapting to this change.

For more information contact Dr. Janet L. Gardner, Dean of Instruction at 618-532-1981 or jlgardner@kccn.kc.cc.il.us

Upcoming Conferences

The League for Innovation in the Community College. June 28-July 1, 1998, Wyndham Anatole Hotel, Dallas, Texas. For further information see: <http://www.league.org>

For a list of other conferences around the country see Oklahoma State University's list of links at <http://www.osu-okmulgee.edu/tlc.htm>

Community Colleges and the Internet: Uses and Impacts

by James D. Layton, University of Illinois, Urbana-Champaign

Will the Internet carry us into the Information Age, or will it contribute to the downward spiral of education in our society? Regardless how educators respond to this question, they have a responsibility to future generations to discuss publicly the issues involved and decide whether it is possible to find a good way to use the Information Superhighway, and to insure that the technology is used wisely.

Most community college web sites are relatively undeveloped, suggesting that the development of guidelines, plans or policies regarding these technologies and their application is still in the future.

Community colleges are the least likely higher education institutions to have policies in place concerning the ethical use of computers, the rights and responsibilities of users, guidelines for instructional and administrative use, and purchasing plans for academic computing. Community colleges are also the least likely to have a formal plan for using the Internet and WWW resources in distance education and for off-campus promotion (i.e., marketing and public relations) (Green, 1996).

This article is based on a study which sought to understand the potential impact of Internet technologies, their usefulness, applicability, and the feasibility of their application in functional areas of community colleges. Twenty-seven recognized experts from 10 states on community colleges, educational technologies, and innovative uses of these technologies were asked to rate ten scenarios in the areas of utility, applicability, feasibility and effect.

The ten scenarios described various possible areas of application of the Internet and related technologies in community colleges, and were based on actual uses of web sites by higher educational institutions, as well as a review of literature on present and future educational and administrative uses of this technology. They were not intended to be exhaustive, nor mutually exclusive. The scenarios were:

1. Internal/external communications
2. Instruction, learning, and curriculum enhancement
3. Institutional public relations, student recruitment, and employment
4. Admissions and records
5. Business and industry relations and economic development
6. Library and learning resources
7. Administrative services and logistics
8. Student, faculty, and staff services
9. Professional development
10. Institutional research, planning and financial management

How *useful* are these technologies?

The most useful scenario was library and learning resources, with the least useful being student, faculty and staff services. Also highly rated were internal/external communications; instruction, learning, and curriculum enhancement; admissions and records; and public relations, student recruitment, and employment. Serving students was considered the most useful application of the technology, however, an outcome well suited to the generally held notion of community colleges as student-centered institutions.

The redundancy of the applications of these technologies caused some concern. Activities described in the scenarios already took place at their colleges using other technological tools such as local area networks and database software, so their usefulness had already been decided.

There was opposition also to the apparent desire of some community college technology innovators to find institutional uses for or fit institutional needs to the technology, rather than assessing needs and finding ways to meet those needs.

How *applicable* are these technologies?

The library and learning resources scenario was rated the most applicable, while business and industry relations and economic development were judged to be the least applicable. Professional development, admissions and records, internal and external communications, and public relations, student recruitment, and employment were rated lower.

In the process of discussing the scenarios respondents mentioned differences in settings (rural versus urban, small versus large), differences in access to connected computers, and differences in access because of a lack of college resources and students from a variety of socioeconomic levels. However, they saw these technologies as easing the impact of

those differences by creating a more equitable learning environment.

How *feasible* are these technologies?

The most feasible (likely to occur) scenario was again library and learning resources. Instruction, learning and curriculum enhancement and internal and external communications also were also highly rated for feasibility. The lowest feasibility rating was given to the student, faculty and staff services scenario. Respondents considered feasibility a complex function affected by monetary and resource costs, security problems, resistance from faculty, staff, and students, and

No matter how useful an innovation is (or is marketed as being), no matter how universally applicable it seems to be, if it is not feasible then it should not be used.

the need for constant maintenance. These were all seen as factors that limited the applicability and usefulness of these technologies.

What are the likely *consequences* of these technologies?

Respondents rated the most likely consequences of these technologies to be institutional effectiveness and institutional productivity, with student outcomes the least likely consequence. The library and learning resources scenario had the highest rating in all areas of potential positive impact, while administrative services and institutional research, planning, and financial management

had the lowest overall ratings in all four areas. Student, faculty and staff services were rated the lowest for potential positive impact on institutional productivity and effectiveness, but somewhat higher in the areas of student outcomes and institutional culture and climate.

Respondents considered the negative impacts of these technologies to be cost, resistance and access, typically seeing these as having potential negative impacts in all areas of the community college. In their comments regarding positive impacts, respondents expressed enthusiasm for the use of these technologies and their positive effects on benefiting students, faculty and staff in the library, in instructional activities, and in administrative uses.

What Does It All Mean?

The findings of this study have specific and general implications for policy.

Implement the Internet and related technologies appropriately. The technology cannot be seen as an end in itself and inappropriately or wastefully introduced and applied. As one respondent noted, the promise of these technologies is so far greater than any benefit in reality: "I have not seen its use improve effectiveness, efficiency, or communications on community college campuses. Its promise has yet to be met." This study has shown that the optimum role of the Internet and related technologies is in the library and the learning resources center; in internal and external communications; in instruction, learning and curriculum enhancement; in public relations, student recruitment and employment; and in professional development. Policy makers must see to it that the promise is realized by the judicious and responsible allocation of resources.

Consider the consequences of adopting the Internet and related technologies. Policy makers at the local level should initiate a planning process that encourages discussion of the potential effects of adopting this innovation. This study found that

respondents saw the use of these technologies as having at least the potential for negative impacts in their institutions.

Planning must take into account the feasibility of innovations. No matter how useful an innovation is (or is marketed as being), no matter how universally applicable it seems to be, if it is not feasible then it should not be used. Respondents believe that while small rural community colleges might expect more benefits to accrue from adopting the technologies in the study, the lack of resources and access severely limits the possibility of such benefits occurring. Larger urban

As one respondent noted, the promise of these technologies is so far greater than any benefit in reality: "I have not seen its use improve effectiveness, efficiency, or communications on community college campuses. Its promise has yet to be met."

colleges with more resources for applications and greater access, may have less to gain since their students are closer geographically and in less need of distance learning and communication.

Other limitations to feasibility include:

- Startup costs for connectivity, software, hardware and technical support and training.
- Maintenance costs for the continued successful use of these technologies.

- Resistance on the part of students, faculty, and staff to the adoption of the technologies.
- Maintaining security for student records, financial transactions and institutional information.

Consider local contexts when implementing the Internet and related technologies. A mismatch between context and technology, such as attempting to use the Internet for distance learning in a rural setting where students do not have access to connected computers, or in an urban setting where distance learning is not needed, means wasted resources and increased resistance on the part of those who see one more fad coming and going. In practical terms, these kinds of mismatches are likely to fail, slowing the pace of change and increasing resistance to future innovations.

Candid assessment of the usefulness of these technologies in context should be carefully undertaken. Policy makers should be aware of the technological resources that are already available to accomplish the educational tasks at hand, such as state-wide networks and centralized databases, agencies that provide technical assistance to community colleges, and instructional television and satellite campuses. Failure to consider these factors will cause problems for the adoption and eventual diffusion of these technologies throughout the institution.

Many Lanes on the Information Super Highway

Many proponents of these technologies have expressed the opinion that community colleges and other educational institutions must adopt them and must do it quickly. Respondents to this study generally concurred with these views, which puts them squarely in the category of technological determinists who see the development and adoption of new technologies as inevitable and beneficial. Such a view is also known as the technological imperative, the

belief that "because a particular technology means that we can do something (it is technically possible) then this action either ought to (as a moral imperative), must (as an operational requirement), or inevitably will (in time) be taken" (Chandler, 1997).

There are alternatives to this perspective in the relevant literature. For example, some critics of a rush toward the Information Age have held that the massive effort presently underway to connect our schools to the Internet is a distraction from real education and a drain on scarce resources; that the ultimate impact and educational value of these technologies for students is at best unknown and at worst harmful and negative; and, more generally, that predicted effects such as dehumanization, alienation, isolation and the destruction of communities will result in chaos and contribute to the breakdown of society.

Community college policy makers and practitioners should make an effort to become aware of these and other alternative perspectives if they are to make responsible and informed decisions concerning Internet technologies in their institutions.

Chandler, D. (1997). Technological or media determinism. Available: <http://www.aber.ac.uk/~dgc/tecdet.html>.

Green, K.C. (1996). Campus computing, 1995. Encino, CA: Campus Computing.

Phelps, D. G. (1994). 2000+: What lies ahead for community colleges as we hurtle towards the 21st century. Community College Journal, Aug./Sept. 1994.

For more information on this topic, contact James D. Layton, Visiting Asst. Professor at UIUC with the National Center for Research in Vocational Education, at 217-333-0807, or j-layton@uiuc.edu. Dr. Layton is a recent graduate of the Community College Leadership Program at the University of Illinois at Urbana-Champaign.

Academic and Occupational Integration and Learning Technologies

by *The Illinois Integration Task Force*

Since 1991, the practice of integrating academic and occupational education within community colleges has grown substantially. To clarify what academic and occupational integration is and how Illinois community colleges can most effectively develop and implement integration strategies, the Illinois Community College Board and the newly formed Illinois Council for Occupational Education, in cooperation with the Illinois State Board of Education and the OCCRL at UIUC, organized a task force on integration composed primarily of community college faculty and administrators.

The Task Force examined many different approaches to integration. Included among these approaches was the use of technology to integrate academic and occupational education. This approach can be defined as the deliberate use of distance learning, computer hardware and software, the Internet, and any other emerging educational/information technology to facilitate the integration of curriculum, academic and occupational.

Fifteen Illinois community colleges report using educational technologies to integrate academic and occupational education, but few are deliberately linking academic and occupational content utilizing these technologies. Yet these technologies are used to facilitate learning in many other ways. Primarily math, English composition and communications, and biology courses are taught using computers to research (via the Internet) or produce class work. Heartland and Sauk Valley appear to be the most advanced in encouraging the use of the Internet in a wide variety of academic and business courses.

Other uses of technology focus primarily on software packages for problem-solving in science, math, agriculture, nursing and engineering. Moraine Valley uses software applications to provide students who are re-entering their Nursing program an opportunity to review their academic and vocational skills. Rend Lake also offers this version of technology use.

Computer labs are also common and are available either to the open student body or at least to specific occupational programs. Shawnee requires computer courses in nearly all occupational curricula, while William Rainey Harper offers links between academic and occupational courses and computer classes, such as a class on Power Point that allows the students to develop presentations for their other classes. This class is team taught and accrues transfer credits. Use of the Internet is not yet very advanced at Illinois Central, because it is seen as "very time intensive." Faculty involvement appears to be crucial in developing and using educational technology, though the administration usually takes the lead in providing students with access to the Internet and computer technology in general.

Clearly, the idea of employing technologies in particular courses is spreading rapidly among community colleges, but using technologies to connect disparate bodies of knowledge is much less evident. And, whereas the potential benefits of new educational technologies may be limitless, the ability to capitalize on them is not. Limited resources and expertise require that community colleges give careful thought to how new technologies will be implemented. How integration can be facilitated by these new technologies should be given careful consideration when the planning is done.

For more information or a copy of the Integration Task Force Report, please contact Darcy McGrath, Assoc. Dir. for Program Planning and Accountability with the ICCB at 217-785-0123 or at dmcgrath@iccb.state.il.us.

On-Line Resources

by *Bruce Scism, UIUC*

The following sites are valuable for those interested in constructing an Internet course and provide instruction, ideas, and practical experiences for developing on-line courses.

<http://www.learnitonline.com/>

On-line tutorials geared towards familiarity with Microsoft Office and Internet software. Tutorials include introductory and advanced levels. Site permits a free trial membership.

<http://help.netscape.com/docs/client/communicator/Contents/Contents.html>

An extensive offering for Netscape users, site administrators, and web page/site developers. Includes javascripting and browser features.

<http://wwwtools.cityu.edu.hk/>

Provides very useful help in developing course content delivery and in use of web software. Free subscription to bi-weekly newsletter.

<http://franklin.scale.uiuc.edu/scale>

Sloan Center for Asynchronous Learning Environments. The how-to and experiences of developing courses for on-line delivery.

<http://www.aln.org>

Asynchronous Learning Network. Useful information for content development and delivery. Access to a journal devoted to the development of course delivery.

See the OCCRL website for more useful site links. OCCRL can be accessed at <http://hre.ed.uiuc.edu/occr1>

If you know of other useful sites or have successful experiences with on-line resources please contact us, and we will post them in this column.

Rich, continued from page 1

keeping equipment up-to-date, as well as models for the management of the network.

The Task Force report acknowledges that "access to the technology we need will not come cheaply, but the cost of not moving forward will be higher in the long-term." In discussions held from May through September, the Task Force compared the significance of this project to the designing of a railway system. Proximity to the rail system enhanced the growth and development of some local economies while leaving others behind. In a similar fashion, access to learning technologies provides enhancements in the new century.

The IBHE received the Task Force Report at its October meeting and will consider a motion to endorse the recommendations and delineate the next steps at its November meeting.

Recommendations

1. ICN should be a program of network services extensive enough to provide universal access to education and information resources at a reasonable cost.
2. The State of Illinois and the telecommunications industry should develop plans for the use of commercially available services and standards where feasible.
3. The ICN should leverage previous state and institutional investments in video and networking equipment.
4. The ICN should be developed in cooperation with other Illinois public sector communications projects and avoid duplication of costly facilities and support.
5. The State should recognize a baseline computing and communications capability for institutions of higher education. The IBHE and the Illinois

Community College Board (ICCB) should determine the gap between current communications capabilities and help public campuses below the baseline raise their capacity.

6. The State of Illinois should create a statewide organization to fund and manage the ICN. The organization should assume the management responsibilities and meet the organizational criteria described in this report.
 - The State should establish a small working group to investigate the organizational issues, recommend a structure, and prepare a full cost estimate for the Illinois Century Network.
7. A technical planning group should be established to
 - prepare a requirements statement for the backbone and serve as technical advisors for its procurement;
 - address the issue of how to reach locations with limited communications access, drawing upon existing Central Management Services knowledge;
 - develop plans for integrating the ICN with existing video facilities, and the ISBE network with other existing public sector facilities
8. The IBHE and the ICCB should prepare a funding strategy to:
 - support development of courses using emerging technologies, collaborative efforts by institutions made possible by these technologies, and pilot projects of new applications, in order to address both training of faculty and students and the employment of staff to manage campus facilities and to support curricular development
 - disseminate successful efforts.

For further information, contact Cheri Rich, Dean of Instructional Services at 217-333-0807 or crich@lakeland.cc.il.us. Ms. Rich is a graduate student in the Community College Leadership Program at the University of Illinois at Urbana-Champaign

Oakley, Evans, and Ward continued from page 2

A centrally-managed ION server will allow faculty to develop course materials using current technologies, including active server pages, streaming audio and video, and real-time or asynchronous conferencing. The server will also enable on-line communication among Network collaborators and encourage Internet-based communication among faculty and staff, enhancing the participating colleges' sophistication in the development, delivery and support of on-line programming. The synergy between the community college partners and the University of Illinois will produce a continuum of on-line pedagogical knowledge from early post-secondary to the graduate level.

Some limits to universal access remain, such as the absence of necessary hardware and optimal connections to the Internet. An interim solution will be the creation of public access sites on the campuses of the participating community colleges.

The ultimate goal of the ION is the creation of ongoing learning and collaborative environments that will produce additional citizen learning opportunities not constrained by the traditional barriers of time and place.

For more information, contact Burks Oakley II, Assoc. Vice Pres. for Academic Affairs and Project Director at 217-244-6465 or oakley@uillinois.edu; Charles Evans, Asst. Vice Pres. for Academic Affairs and Dir. of Statewide Programming at 217-333-1460 or c-evans4@uiuc.edu; Lynn E. Halpern Ward, Asst. to the Vice Pres., at 217-244-6465 or lynnward@uillinois.edu. Or access <http://uillinois.online.uillinois.edu/>

University of Illinois
Office of Community College
Research and Leadership
College of Education
347 Education Building
1310 South Sixth St.
Champaign, IL 61820

NON-PROFIT ORG.
US POSTAGE
PAID
CHAMPAIGN, IL
PERMIT NO. 75

Subscription/Address Change

To be placed on our mailing list, obtain a FREE copy of *Update*, or change your address, provide the following information via mail, fax, or e-mail to the Office of Community College Research and Leadership, 347 Education Building, 1310 South Sixth Street, Champaign, IL 61820.

Phone: (217) 333-0807 Fax: (217-244-5632 e-mail: d-bragg1@uiuc.edu

Name: _____

Title: _____

College/Organization: _____

Address: _____

City & State: _____

Zip: _____ E-mail: _____ Website: _____

Work Phone: _____

New Subscription Change of Address