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As Distance-Learning Boom Spreads, Colleges Help Set Up Virtual High Schools

Backers say specialized on-line courses can benefit students in low-income districts

BY SARAH CARR AND JEFFREY R. YOUNG

DISTANCE EDUCATION might soon be as fashionable in America's high schools as cell phones and baggy pants. A growing number of colleges, schools, and companies are delivering high-school courses over the Internet.

Most of these "virtual high schools" aren't trying to replace traditional schools, however—cyberspace isn't filling up with P.E. and band classes, at least not yet. The virtual schools focus mainly on Advanced Placement and college-preparatory courses in the kinds of subjects that many traditional high schools don't have enough teachers or money to offer. Proponents say distance education can give high-school students in poor districts opportunities for advanced classes that have traditionally been available only in upscale areas.

Students usually enroll in only one or two virtual courses, meeting the rest of their requirements in traditional classrooms. The financing of the courses varies, depending on the nature of the program: In some cases, students and parents are expected to pay, while in others, school districts or state departments of education cover the costs.

The virtual-high-school programs are so new, however, that little has been done to assess the quality and effectiveness of their courses, even when great care has been taken to produce them. And some observers worry that fly-by-night operations might emerge and try to peddle inferior



J. CARL GANTER

Brian McNeil, who is taking virtual A.P. physics labs offered by Michigan State: "The concepts they explain are simple, and not difficult to understand."

courses to unsuspecting high-school students on line.

Among the states whose governments, universities, or schools have created virtual high schools are Arizona, California, Florida, Kentucky, Massachusetts, Michigan, Nebraska, and Utah. The programs transcend state boundaries, however, and many of the courses are open to students anywhere.

HARD-TO-FIND CLASSES

In some cases, universities are leading the creation of virtual high schools. For instance, the University of Nebraska at Lincoln created a for-profit spinoff, called Class.com, to sell high-school courses over the Internet (*The Chronicle*, April 16, 1999).

In other cases, schools or school districts are teaming up to start on-line programs. A Massachusetts-based education consortium, for example, is working with 220 high schools in 30 states to develop and share on-line courses. A number of for-profit companies are also developing or offering high-school courses on line.

Colleges and universities involved in offering on-line high-school courses say they're not interested in taking over the business of teaching younger students. Instead, they're focusing on offerings that are hard to find in many high schools: remedial courses, such as English as a second language, and courses for gifted students, such as advanced composition classes.

"We would like to help educators do their jobs better," says John A. Blair,

the president of Nebraska's Class.com. "They know very well how to offer their core courses. It is in the endpoint areas that we have identified a need, and it is our intention to help educators solve that problem." Mr. Blair hopes that Class.com courses and curricula will help high schools deal with other problems as well, such as teacher shortages and over-enrollment.

Raymond Ravalgia, the deputy director of Stanford University's Program for Gifted Youth, agrees that colleges should play a role in providing courses in specialized areas. He says both high-school teachers and textbook publishers frequently are unable to provide adequate resources for gifted students.

"Textbook publishers develop their materials geared at some conception of the average student," he says. "They are generally not interested in micro-niches of students, so this is some place natural for universities to step in."

In the Stanford program, which began in 1992, grade-school, middle-school, and high-school students can take a range of advanced courses, including some for credit at the university. The students and their families pay for the classes in the majority of cases, with some opportunities for financial aid, but Mr. Ravalgia hopes that ultimately more schools will offer to pay for the courses, which typically cost \$435 per quarter.

At the University of California, officials created an on-line high-school program to help level the playing field for the

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SHMUEL THALER FOR THE CHRONICLE

Elaine Wheeler of the University of California: "We're trying to provide something where nothing is currently happening."

INFORMATION TECHNOLOGY

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state's students. Students applying to attend the university's campuses are ranked for admissions purposes on the basis of grades and standardized-test scores using a point system, and those who have taken honors and advanced-placement courses are awarded additional points. But high schools in some areas don't offer honors or A.P. courses, leaving their students at a disadvantage.

"What we are trying to do is to make Advanced Placement courses available to students who otherwise wouldn't be able to take them," says Elaine Wheeler, the project director of the University of California College Preparatory Initiative. "Our philosophy is that nothing beats a quality teacher teaching good curriculum to stu-

"If a student chooses not to take the harder courses when able to do it face to face, but takes them on line, that would be an issue I would want to explore."

dents in a classroom, but we are trying to provide something where nothing is currently happening."

This semester, the university system is offering courses such as A.P. calculus, honors psychology, and microeconomics to students at 27 high schools. The program is supported by a \$4-million allotment from the state. Organizers of the College Preparatory Initiative also hope that the students who are accepted to the university will be better prepared for college-level work as a result of the on-line classes.

Brad Huff, the science coordinator at the Fresno County Office of Education, says that this fall, 24 high-school students in the county are taking an A.P. chemistry course offered through the University of California programs. Students from the Fresno schools study, communicate, and take tests completely on line, and meet once a month for hands-on laboratories.

CLOSING A GAP

Mr. Huff says he hopes such courses will help lessen the disparity between class offerings at large

and small schools, and help more students from the region gain admittance to the university.

Meanwhile, some high schools are working on their own to provide distance education.

One of the largest school-sponsored efforts is the Virtual High School, run by the Concord Consortium in Massachusetts (<http://vhs.concord.org/>). The non-profit group is working with about 220 high schools, though only 110 of the schools are currently offering courses. The effort is financed by a five-year, \$7.8-million grant from the U.S. Department of Education.

Participating schools must develop and teach at least one course on line, in exchange for which their students can take on-line courses from other member schools. Bruce

F. Droste, director of the Virtual High School, calls it "the barter system for education."

VIRTUAL TRAINING

Teachers must take a 26-week training course—on line, naturally—before they are let loose in a virtual classroom. Mr. Droste says that the cooperative effort allows a high-school teacher to design and deliver a "dream course" on a subject of personal interest. Courses on ethnobotany, A.P. statistics, or American popular music might not be in enough demand at a single school, but they can fill up quickly on line. Class size is capped at 20 students.

Companies are also looking to cash in on distance education for high schools. APEX Online Learning, for instance, focuses on

U. of Nebraska's Class.com

creating and delivering Advanced Placement courses on line (<http://www.apex.netu.com/>). The company, started by Microsoft co-founder Paul Allen, offers only four A.P. courses so far—calculus, statistics, microeconomics, and U.S. government. Bryan Barnett, the company's chief academic officer, says more courses are in development. Each costs \$395.

The company isn't an accredited high school, so it can't grant academic credit for its courses, though students are free to take A.P. tests in hopes of receiving college credit for their work. And APEX is working to form partnerships with high schools and colleges under which those institutions would grant credit for APEX courses. Last month, APEX officials forged such an arrangement with Michigan Virtual University, for instance.

DIRECT TO HIGH SCHOOLS

Another company, Archipelago Productions, is developing materials for on-line high-school classes (<http://www.archipelago.com>). The company does not deliver courses on its own, but instead sells its materials to high schools or colleges that want to use them. It is a division of Harcourt General, the textbook and trade publisher.

What concerns some school officials and others is that the possibility of profits might also attract questionable operations. The College Board, which creates and administers the A.P. tests, is particularly concerned that companies could promote on-line courses as preparing students to take A.P. tests.

Says Lee Jones, executive direc-

tor of the A.P. program for the College Board: "It makes me wonder to what degree the College Board needs to be involved with determining standards for delivery. If people are going to use the A.P. name, we want to have some mechanism in place to measure quality." Mr. Jones also says that the board is now considering whether it should offer its own A.P. courses on the Internet (*The Chronicle*, October 8).

Some educators are trying a different approach—setting up virtual laboratories. Wolfgang Bauer, a physics professor at Michigan State University who is teaching an on-line A.P. physics course this semester, is creating interactive simulations for it, including a Java program that shows students a video of a computer being thrown off of a building.

Students can stop the video at any point and find out the speed

and height of the falling object at that instant. Students are asked to plot this data and compute gravity's influence on the object's acceleration.

"I think that's a very valid lab experiment," says Mr. Bauer. "The only thing they don't get is the satisfaction of dropping the computer five stories and smashing it themselves."

VIRTUAL IS BETTER

He argues that virtual labs can actually provide better training than can a traditional laboratory.

These days, even physicists do much of their work with computer simulations, Mr. Bauer adds.

One of the students in the course, Brian McNeil, says that so far the on-line labs have served their purpose. "They are quite simple by definition—the concepts they explain are simple, and not difficult to understand in the abstract," he says. He adds that he may miss having real lab sessions "later on, when the subject matter turns to thermal physics, electricity, etc."

Mr. McNeil's only complaint so

far is that the course is too easy, covering concepts he had encountered earlier, in an independent-study course. "I expected it to be rather more difficult than that," he says, "given that it is the on-line version of a 200-level physics course at a large university."

One college admissions official says she hopes the additional options don't add too much to the pressure on high-school students.

"The bar is already so high for students," says Robin G. Mamlet, the dean of admissions at Swarth-

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Textbook publishers "are generally not interested in micro-niches of students, so this is some place natural for universities to step in."

Some aspects of a high-school education, such as science laboratories, are more difficult to replicate in cyberspace than others.

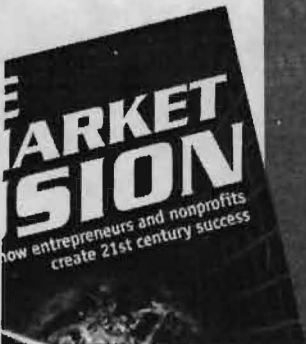
For one of the Virtual High School's courses in physics, the school mails students laboratory kits so they can perform experiments in their schools or homes.

"We went out and bought a lot of large fishing-tackle units" to package the kits, says Mr. Droste. The kits include various tools and instructions for doing the labs. At other virtual high schools, students

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more College. "One worries that all this will do is add to their burden, and they will not only take courses at school, but also on line. There is a joyless drudgery in taking as many courses as possible."

AVOIDING HARD CLASSES

Ms. Mamlet acknowledges that on-line courses will be a boon to students who do not have access to A.P. and honors classes, or who want to take courses their schools do not offer. She said she would be wary, however, if a student opted for an on-line course instead of taking a traditional course that seemed more challenging.

"If a student chooses not to take the harder courses when able to do it face to face, but takes them on line, that would be an issue I would want to explore," she says.

Most leaders of the on-line programs don't intend their courses to make face-to-face interaction obsolete. But the director of Christa McAuliffe Academy—a private, accredited, on-line school based in Washington—says he hopes to present students with a viable alternative to more-traditional schools, even requiring courses like P.E.

The director, Glen Blomgren, says he's spent 10 years working to have Christa McAuliffe accredited as a degree-granting, distance-learning program, and now he wants to make the curriculum "available to the masses." Currently more than 300 students are enrolled at Christa McAuliffe.

"My plan is to be serving a million students within five years," he says. "We feel like we are poised on the edge of a huge explosion with this." ■

Looking for classroom resources, software, or testing resources?

NOVEMBER 4, 1998

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Program Puts Teachers On-Line

Soldotna, Alaska

Fresh from a midafternoon jewelry-making session with fellow home schooling students, 11-year-old Janet Cooper says there isn't much she misses about going to school.

Rowdy students in her 5th grade class at a local elementary school made learning tough last year, she says. This fall, Janet and her younger sister say they're happier learning in the small-scale "classroom" their mother set up for them in a corner of their living room. A first-time home schooling mother, Tricia Cooper signed up with the Interior Distance Education of Alaska program, a distance education program that caters to home schooling families.

"I tried to be involved with the [elementary] school as much as possible," Cooper says. "But as much as I was involved, I still felt Janet was frustrated. It just wasn't worth it anymore."

Like the Family Partnership Charter School, the IDEA program gives home school parents access to state money for private lessons and school supplies without setting too many restrictions on the materials they may purchase. Unlike the Anchorage district's FPCS, the distance-learning program does not require regular face-to-face teacher time. Instead, idea supplies each family with a personal computer they can use to connect with teachers based in the program's branch offices in Anchorage, Fairbanks, and here on the Kenai Peninsula.

Started last year by the tiny 240-student Galena school district on the Yukon River, the program serves K-12 students in almost every corner of this vast state. Thanks to a 1995 state provision that permits cross-district enrollment, the ranks of the Galena-administered IDEA have swelled from three families to nearly 3,000 students in less than two years. Just 25 teachers serve the group.

Galena Superintendent Carl Knudson said he started IDEA as a way to round up the money the district needed for a new boarding school for far-flung high school students. He realized that a cost-effective distance education program would ultimately win state dollars. The program turned out to be so cost-effective, in fact, that Galena had enough surplus state aid to help run the boarding school, which opened in 1997.

Today, parents in the program receive \$1,200 to \$1,600 in state funding per student depending on grade level, in addition to the cost of a personal computer. Because of the boom in student interest, both the state and the district have agreed to cap enrollment for now.

Knudson says he never intended the program to grow so big, so fast, but

Return to the main story, "Half Way Home," in This Week's News.

the demand was simply overwhelming. "It was just the consumer market," he says. "The need was there."

Interior Distance Education of Alaska's student base originally came mostly from home school students who weren't previously attending public schools. But this year, a significant number of families like the Coopers have left traditional public schools or district correspondence programs to sign on with the program.

John Dahlgren, the superintendent of the 10,000-student Kenai Peninsula Borough School District, estimates that his district lost roughly 200 students to the IDEA program this year. He says he is concerned that families have been too quick to embrace a program that offers enticements such as curriculum choice and private lessons, without providing the necessary oversight.

Given the program's emphasis on choice and its loose accountability structure, IDEA is a "real shopping cart approach to education ... It's basically a voucher program," Dahlgren says, adding that he is concerned for the students whose parents aren't providing them with adequate instruction. "I think the state has created a real nightmare that the department of education is going to have to address," Dahlgren says.

Supporters of the program, though, contend they don't have to answer such criticisms because their high test scores have already done the talking. Combining the scores of its in-district students and the IDEA students, Galena placed among the top 10 districts in the state on standardized tests administered last spring.

Less than two months into the school year, Janet Cooper says she already feels she's learning more at home. "I get more attention," she says. "I can actually learn without the distractions of other kids misbehaving."

-- JESSICA L. SANDHAM

On the Web

Read more about [Interior Distance Education of Alaska](#), Galena City School District's correspondence program for homeschooling students in the state of Alaska.

The Federal Way School District in Washington State began offering its [Internet Academy](#) to home schoolers three years ago.

Janie Levine Hellyer, a home schooler in Olympia, Wash., founded the [Family Learning Exchange](#), an on-line support network.

A former schoolteacher has founded the [Willoway CyberSchool](#), where she conducts classes via videoconferencing for 40 home-schooled middle-school students.

The Idaho-based [Escondido Tutorial Service](#), was founded five years ago and now has more than 300 students.

USING EDUCATIONAL TECHNOLOGY TO IMPROVE TEACHING AND LEARNING

"This debate has never been about technology. It has been about what our children have the opportunity to do. It's about much more than just giving a young person a computer or connecting that person to the Internet. It's about connecting students to a whole new world of learning resources and offering the mind the opportunity to expand and take on a new and challenging future."

U.S. Secretary of Education Richard W. Riley
July 29, 1998

New and developing computing and networking technologies continue to expand the range of resources, skills, and learning environments that are and will be accessible in the future. Used creatively and aligned to high standards, technology can support inquiry-based learning where students are experimenting and exploring challenging content rather than just reading about it. When supported by technology-based interactive visualization, simulation, and "hands-on" modeling opportunities, students may be able to understand difficult concepts earlier and more readily than ever before. The 1994 reauthorization of ESEA included the first step in ensuring that our students would have access to this changing technological world and its opportunities to support achievement to high standards.

The Technology Literacy Challenge Fund (TLCF), the Technology Innovation Challenge Grants, and the Star Schools programs have charted a path toward modernizing schools and classrooms for the Information Age. Building on the success of these programs, our plan for reauthorization would help teachers and students step into the next century by successfully integrating technology into the curriculum. The Administration's proposal to reauthorize the ESEA would:

- **Stimulate the development of the next generation of tools and applications** through the consolidation of the Technology Innovation Challenge Grants and Star Schools programs into one discretionary authority. Next Generation Technology Innovation awards would advance the use and development of cutting-edge technology and include a stronger focus on identifying and evaluating innovative, effective models that other schools and districts could adopt. The awards would continue the Star Schools program's commitment to using technology--particularly web-base instruction--to provide access to challenging course content, such as Advanced Placement and foreign language instruction, to students in disadvantaged and rural areas.
- **Continue the commitment to using educational technology to improve teaching to high standards.** In a 1998 survey, only 20 percent of teachers reported feeling very well prepared to integrate educational technology into classroom instruction. Our proposal would help teachers use technology to engage students in challenging content, remain current in their field, and connect with fellow teachers and other experts. The TLCF would increase classroom access to technology and support ongoing, intensive teacher development in the integration of educational technology to support challenging standards for all students. Our proposal would also support the Preparing Tomorrow's Teachers to Use Technology program which would engage entire faculties of institutions of higher education in creating comprehensive strategies for building effective technology use into the teacher education curriculum.
- **Target support to the neediest schools and communities.** In 1998, only 39 percent of classrooms in high-poverty schools — compared to 62 percent of classrooms low-poverty schools — were connected to the Internet. The proposal would help narrow the "digital divide" between school districts that are "technology proficient" and those that are "technology deficient" in their access to and *effective use* of hardware, software, and human resources to reach high academic standards. The Technology Literacy Challenge Fund would explicitly target funds to high-poverty, low-performing schools. In order to build capacity, districts would be encouraged to partner with technology-proficient school districts, institutions of higher education, non-profit organizations, and businesses. In addition, because children in poor families are less likely than others to have computer and Internet access at home, the proposal would support community technology centers to serve disadvantaged residents of high-poverty communities. The centers would increase access to job networks, training, and student tutoring, and help both children and adults become technology proficient.
- **Build school and district capacity** through resources for planning, evaluation, and investment in new technology applications. Regional Technology in Education Consortia would continue to build partnerships and provide support to strengthen state and local technology efforts.

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October 13, 1999

EducationBy PAMELA MENDELS **BIO****Kentucky Reaches for High School Students With Internet Courses**

Beginning in January, students in Kentucky who wish to delve into Catullus, Cicero and other masters of Latin will be able to log on to a new Web site and work through the classics in a course offered entirely online.

The class is one of about 15 expected to kick off Kentucky Virtual High School, an ambitious Internet-based education venture announced last week by the governor of Kentucky. If all goes as planned, students at public high schools across Kentucky eventually will be able to choose from and enroll in a variety of online courses offered free through the state's Department of Education.

Aiming at students in small, rural school districts that suffer from a shortage of teachers.

In launching the venture, Kentucky has joined a small but growing group of publicly financed efforts to offer high school courses over the Internet for credit. And as more schools, homes and public facilities become wired, the number is likely to grow, said Julie M. Kaminkow, special assistant to the director of the Office of Educational Technology at the

U.S. Department of Education. "It's a great way to provide courses to students who otherwise might not be able to take classes in calculus, AP history and what have you," she said. "It allows for a broad array of course selection in school."

Details of the ventures vary in both the types of courses they offer and how they are structured. For example, the Virtual High School, financed in part through a federal grant and operated by the nonprofit Concord Consortium in Concord, Mass., offers primarily elective courses, like advanced placement statistics and aviation history. It is operated as a cooperative, with schools in 26 states and a number of countries agreeing to design and teach Internet-based courses in exchange for their students being able to participate.

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The Florida High School, a four-year-old project financed by the State of Florida, hires teachers who design and teach the courses, many of them central to a basic high school curriculum, like algebra and English. By 2001, said Bruce B. Friend, assistant principal of the school, the project expects to offer all the courses necessary for a student to earn a high school diploma in Florida. Most of the students enrolled are public high school students, he said, but a substantial minority -- about 30 percent of the 1,200 students statewide -- are home-schooled students.

In Kentucky, the effort is aimed in large part at students in small, rural school districts that suffer from a shortage of teachers qualified to teach upper-level math, science and foreign language courses.

"The whole structure of opportunity in public high schools has been tied to how schools are organized -- groups of students in classes and economies of scale," Wilmer S. Cody, Kentucky commissioner of education, said in a telephone interview. "But this technology is a way you can deliver a high school course if there's only one student in the school who wants to take the course."

The classes were developed by two sources, Kentucky Educational Television and Class.com, a new for-profit online learning venture set up by the University of Nebraska, which has been preparing correspondence classes for high school students for years and now has developed a number of courses for the Internet.

Each course will be taught by an instructor certified to teach in Kentucky, and the teachers will be trained in Internet instruction. Students, who are likely to take the courses at their schools during the school day, will each be assigned to a coach, an adult at the school who can monitor the student's progress.

Edward S. Ford, an education policy advisor to Gov. Paul Patton and one of the architects of the project, predicts that between 2 and 1/2 and 5 percent of 195,000 students enrolled in Kentucky public high schools will enroll in the online courses during the venture's first year.

Enrollment is to be paid for by the school districts at about \$300 per student per course. Cody said this is about the price school districts pay for student enrollment in conventional classes. Eventually, the program is expected to be open to non-traditional students as well -- such as young people in jail, adult learners seeking a high school diploma or students being schooled at home.

Not everyone is embracing the growth of online virtual high school courses, however. Mark A. Shoup, a former teacher and spokesman for the Indiana State Teachers Association, said the union, in anticipation of virtual projects being introduced in that state, has a number of concerns about the ramifications of virtual classes.

One is whether schools might be tempted to do away with classroom instruction for subjects with small enrollments if online alternatives are available. Another is whether online instruction is as effective as a traditional class. "There's a dynamic that goes on in a classroom," he said. "I'm afraid that would be compromised online."

Cody said he believed there is as much a possibility for good instruction as bad online, and said that students' progress in the online courses will be measured, for a kind of quality control, in a way that can be compared with the progress of students in conventional classes.

Moreover, designers of the Kentucky program, which has received the support of that state's teacher's union, say that there is enough virtual conversation, built into the courses through e-mail and online discussions, that they believe students will be able to get to know their teachers and receive individual attention.

"It does not decrease interaction between teachers and students," said Mary Beth Susman, chief executive of Kentucky's Virtual University project and one of the organizers of the high school venture.

At the same time, project organizers say, virtual courses do demand a special kind of high school student. "This kind of education is probably not for everyone," said Ford, the governor's education policy advisor. "It takes a motivated student, capable of being self-taught."

The EDUCATION column is published weekly, on Wednesdays. Click [here](#) for a list of links to other columns in the series.

Education

Sites

[Internet links of interest to readers of the Education column](#)

Forums

[Join a Discussion on Technology in the Classroom](#)

Related Sites

These sites are not part of The New York Times on the Web, and The Times has no control over their content or availability.

- [Latin literature](#)
- [Kentucky Virtual High School](#)
- [Kentucky Department of Education](#)
- [Office of Educational Technology](#)
- [Class.com](#)
- [Kentucky Educational Television](#)
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Florida's Virtual High School Breaks The Mold

By Tiffany Danitz, Staff Writer

stateline.org

Friday, October 08, 1999

Florida has a high school that breaks all the rules of what the term "high school" implies. There is no school building, there are no bells between classes, and the school population is not drawn from normal geographical boundaries. This unique new school is an online statewide virtual place of learning where class begins when the kids click on.



Students arrive, sans yellow bus, at their Internet classroom on their own timetable, be that 9 a.m. or 9 p.m. But once they are at their computer, the work is tough, highly technical and involves a multitude of disciplines. The state legislature-funded project is two years old and serves 2,000 students.

The Florida (Online) High School principal, Julie Young and teacher Cheryl Woods demonstrated the new technology for governors and other participants at the recent National Education Summit in Palisades, New York. IBM, a partner with the virtual

high school, was one of the sponsors of the summit.

How does it work? Any Florida student in grade 9-12 who is admitted to the program can choose from among 51 different courses covering everything from English, Math and Science to electives such as ancient Latin and modern business technology. Courses are free, and the cyber school employs certified fulltime teachers.

Students do their classwork on a computer desktop, interacting with teachers by e-mail, telephone and occasional face-to-face meetings. Algebra World, one of the math courses available, requires students to build a graph like that used for the board game "Battleship" and theoretically instills knowledge about graphs, slopes and x and y axis.

Although students are expected to retrieve information off the World Wide Web, they are also forced out of doors to interview professionals, or visit a workplace to help them better understand the subject they are studying.

Florida (Online) High School expands the "repertoire" of public education.

Cyber-principal Julie Young

The academic curriculum, which meets Sunshine State Standards, can eliminate a student's need to attend a traditional public school but most of those who have signed up so far are supplementing their regular school work..

Julie Young, the cyber-principal, described her school as a way of expanding the "repertoire" of public education, "so that kids get everything they need. There are so many different kids and lots of different ways to teach."

To benefit from the online school, students must be self-motivated and independent learners. To enroll, they must get permission from their principal, guidance counselor and parents.

"This isn't for everyone," Young says. "In reality, a classroom does not work for every student and online won't work for every student either."

Only five percent of those enrolled are full-time virtual students. Twenty-five percent are home schooled and the rest are enrolled in traditional schools. Those in normal public or private school take the online courses during or after school hours.

Every Florida school district participating in the project is required to provide computers for needy students.

"We are in the infant stages of serving that population," Young says. The legislature just donated 50 computers that will be used in pilot projects for minority students without access to computers and troublemakers suspended from regular classrooms.

Not everyone is delighted with the project. Mark Shoup, of the National Education Association-affiliated Indiana State Teachers Association said there is a small, but growing fear among educators that computers may one day replace them.

"Teachers are aware of becoming obsolete," Shoup told *stateline.org*.

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History of The Florida High School

Although computer-based instruction is not a new educational invention, the advent of the Internet environment brings new possibilities for joining the best technology with the best instructional practices.

In 1996 the Orange County Public Schools introduced an experimental WebSchool that offered online courses which included SAT Preparation and Computer Programming to Orange County students. Just as Orange County was venturing into cyberspace, Alachua County was also proposing an online school to span the state. Thus after collaboration between the two counties, The Florida High School officially began in August, 1997 as a joint project between Alachua and Orange County Public Schools with fifteen educators who served in administrative, instructional, and/or developmental jobs.

The project's mission is to place a complete high school online by the year 2001 and will include those student services that will enable students to successfully transition to postsecondary educational institutions and to the workplace. To maintain high quality, course content will meet the requirements of the Florida Sunshine State Standards as well as important criteria such as the SCANS competencies that are supported by both the education and business communities.

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LEXINGTON HERALD-LEADER

Published Friday, October 8, 1999, in the Herald-Leader

Virtual high school to offer advanced courses statewide

Program thought to be first in nation

By Linda B. Blackford

HERALD-LEADER EDUCATION WRITER

FRANKFORT -- Senior Emily Hester has taken every math and science class the tiny Pineville High School has to offer, and currently does college-level math during the school's one pre-calculus class.

That's why she was thrilled to learn about a new statewide program, unveiled yesterday, that will let her take advanced math, science and language courses over the Internet.

"It sounds great. Our school is so small we just don't have teachers for higher math and science," said Hester, who plans to get a doctorate in psychology.

The Kentucky Virtual High School is aimed at students just like Hester, who want to take advanced classes but attend remote or small schools that can't attract or afford the teachers.

"Not a single one of Kentucky's 195,000 students should be denied the opportunity to enroll in high-level courses because of the size or location of their school," Gov. Paul Patton said at a news conference yesterday. "It's a major step forward in terms of equality for students in all areas."

The Kentucky Virtual High School, which state officials called the first of its kind in the nation, will start in January offering Algebra I and II, Geometry I and II, Chemistry I and II, Physics I and II, Spanish I and II, German I and II, Latin III, Latin literature, humanities and advanced placement calculus.

The selection could easily expand to more AP classes, said Mary Beth Susman, the CEO of the Commonwealth Virtual University, which is providing the basis for the virtual high school.

Classes will be provided by two national internet education companies.

All the classes will be online, with some CD-ROM and video materials

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All the classes will be online, with some CD-ROM and video materials available as well. A certified instructor would send and grade assignments online, but coaches would also be at the local school location to help students.

The courses will cost school districts about \$300 a student, the same as a regular classroom course. Officials could use technology funding to pay for them, said Gene Wilhoit, deputy commissioner at the Kentucky Department of Education.

The virtual high school could serve between 3,000 and 5,000 students the first year, Susman said.

The program will echo the long-distance satellite classes provided by Kentucky Educational Television, which is a partner in the program. Those classes, which are given to entire classes of students, will continue because the virtual high school may only serve one or two students at a school.

"For large classes, we have been able to deliver coursework via satellite," said Ginny Fox, executive director and CEO of KET. "But that is really inefficient for the one or two students who may need a class."

Fox said she expects that some of their existing online instruction will be funneled through the new virtual high school.

The courses will also be available to adults working toward a GED or those learning English as a second language. Home school students and students in state juvenile justice facilities could also take the classes, but everyone outside of public school would have to pay the \$300 themselves.

Education Commissioner Wilmer Cody said the virtual high school wouldn't be possible without the well-funded system of computers and wiring already in place in Kentucky schools.

Every school in Kentucky has at least one Internet-connected computer for every 10 students; that's supposed to sink to a 6 to 1 ratio by next year.

But the virtual high school won't be for all students. It will require motivated, independent learners who aren't easily daunted by a virtual teacher, officials said.

"This will take a very mature student," said Judith Gambill, president of the Kentucky Education Association. "This is the icing on the cake for those accelerated students, wherever they go to school."

Accelerated students like Emily Hester think they're more than ready for the virtual high school.

"I took physics on the satellite class and you have to be independent and teach yourself, but it works pretty well," she said. "It sounds like this would be the same."

The Web address for the virtual high school is www.kvhs.org.

Reach Linda Blackford at (606) 258-9253 or email:
lblackford@herald-leader.com.

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The Chronicle of Higher Education
10/22/99

Distance Education Can Bolster the Bottom Line, a Professor Argues

AUSTIN, TEX.

ALTHOUGH SOME colleges use distance education to improve teaching, one professor thinks the technology can also increase enrollment and revenue.

Christopher J. Dede, a professor of education and of information technology and engineering at George Mason University, told those attending a conference here last week that they need not worry about the cost of new technology. Distance education, he said, would enable colleges to increase the number of students they serve—and increase tuition income.

The math is complicated, but Mr. Dede explained that a college—if it used space efficiently—could enroll one-third more students by holding a quarter of each course's class meetings on-line, rather than in the classroom.

The extra revenue in tuition and fees would more than pay for the technology, he said.

"It's much more expensive to build a building than a virtual building," he said at the conference, Telelearning '99, which was organized by Austin Community College and several other sponsors.

'HYBRID COURSES'

But additional revenue is not the only benefit of distance-learning technology. Other speakers at the conference said that "hybrid courses," which incorporate elements of traditional and on-line ed-

ucation, improve the learning experience for many students.

Virginia Crank, an assistant professor of English at Rock Valley College, in Rockford, Ill., said the hybrid approach had helped shy students participate in one of her courses, in which face-to-face meetings are often dominated by a single student. "He consumes the class time with his energy," Ms. Crank said. "When we go on line, this student is forced to listen to the other students."

Ms. Crank also said that students had responded to their classmates' written work in greater depth when they had to state their views in writing, instead of simply nodding in approval in the classroom. "I predict that hybrid classes are going to be even better than both traditional and on-line classes," Ms. Crank said.

The barrier to the effective use of information technology, Mr. Dede said, is the professor who doesn't know how to make use of the new tools. "Learning the technology isn't very difficult," he said. "Learning the pedagogy is going to be more difficult."

But he predicted that distance-education technology eventually would become commonplace in higher education.

"Within my lifetime, refusal by a faculty member to use distance-learning technology will be considered professional malpractice," said Mr. Dede. —DAN CARNEVALE

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U. of Nebraska's Class.com Hooks Up With a Kentucky School

A FOR-PROFIT COMPANY created by the University of Nebraska at Lincoln has scored a major sale: It will provide on-line courses to a new virtual high school in Kentucky.

Gov. Paul Patton of Kentucky, a Democrat, has announced that the state will purchase courses from the company, Class.com, to help start the Kentucky Virtual High School. The school will offer on-line courses to students throughout the state beginning in January.

Mary Beth Susman, chief executive officer of Kentucky Commonwealth Virtual University, said the state would pay \$195 to Class.com for each student enrolled in one of its courses. The virtual university has worked with other state agencies to develop the high school.

Richard Edwards, senior vice-chancellor at Nebraska, said the university had founded Class.com with the goal of helping school districts, like those in Kentucky, make education more equitable.

"We have been working hard for three years to make courses that work in exactly the kind of circumstances that Kentucky has identified," he said.

KENTUCKY TEACHERS

The Kentucky Virtual High School will license 10 to 12 courses from Class.com. Although the content of the courses has been developed by Nebraska, students will sign up at their local high schools and take the classes with teachers certified in Kentucky. All of the classes will be offered almost wholly on line, with some CD-ROM and video supplements.

Ms. Susman said state officials would like Kentucky high-school teachers to be able to create some of their own on-line courses as well. To meet that goal, the state has contracted for training and software with eCollege.com, which provides consulting and other services to faculty members and institutions that hope to put courses on line.

Ms. Susman said the deal between Kentucky and Class.com demonstrated that on-line education is blurring the distinction between high school and college.

The Kentucky Virtual High School would enroll 900 students in its first semester, with a goal of 4,000 to 5,000, she said. Initially, the virtual school will focus on advanced mathematics, science, and language classes. Ms. Susman said the aim was to provide all students in the state with access to the same classes, regardless of the wealth of a school district.

"This is a major step forward in terms of creating an equality of opportunity for all students in Kentucky, particularly those in rural areas," she said.

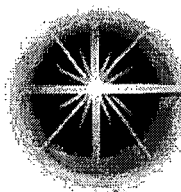
Class.com was created in the spring by the University of Nebraska at Lincoln, which has operated an accredited, correspondence-based high school since 1929. Leaders of the company hope to continue to contract with individual high-school districts or consortia of districts to offer their courses (*The Chronicle*, April 16).

It is not surprising that Kentucky looked to an outside source for some of its initial courses, said Phyllis Lentz, a resource and research specialist at Florida High School, a virtual high school in Florida. "The development of curriculum is a very time-intensive process," she said. Because high schools generally have to offer many of the same core courses, "a course doesn't always have to be reinvented—it can be transferred to another state or environment," she said.

Florida High School has been in existence for two years and currently works with about 2,000 students in 57 counties. Ms. Lentz said she anticipated that other states would soon establish programs comparable to the Florida and Kentucky schools. "From the number of phone calls we get, it sure seems like everybody is," she said.

—SARAH CARR

The Chronicle of Higher Education 10/22/99



Iowa Communications Network

About the ICN / ICN Administration / Services / News / What's New

The ICN Story

If you can *imagine* it, you can *do* it...

I **magine it. Bike across Africa. Visit the plains of the Serengeti and the slopes of Mt. Kilimanjaro.**

Imagine it. Giant tortoises, penguins, volcanic eruptions. The Galapagos Islands.

Imagination became reality for Iowa students who had the opportunity to travel to these distant lands as part of a series of interactive journeys. Through the use of ICN video, students in classrooms throughout the state were able to explore right along with a team of adventurers as they traveled across Africa by bicycle and a few months later retraced Charles Darwin's 1835 journey to the Galapagos Islands.



"It was really cool because we had been learning about Africa, so it was neat to see the people. The ICN is awesome!" - Amanda, a sixth grader from Parnell Elementary, Parnell

Through these full-motion, two-way, interactive experiences, elementary, middle, and high school students got a taste of the culture, geography, and wildlife in other corners of the world. In addition to the video component of the programs, students were able to follow the team's adventures via the Internet and give input on where the team should travel next and what they should study along the way. All of these activities were made possible by ICN technology.

Pen pals took on a new twist when third grade students in Schleswig interacted with students in Wales, United Kingdom, using ICN compressed video. During the school year, the students became acquainted via e-mail. At the end of the school year, the students were able to ask questions and share photographs with their pen pals using ICN video services. By using ICN technology students were able to "travel" to Wales and learn about Welsh culture without leaving their classroom.

High school students are able to prepare for college through the use of two-way, interactive ICN full-motion video. Many schools, especially in rural areas, are unable to offer some of the advanced courses that are prerequisites for college admission. By taking advanced placement classes via the ICN, students are able to complete required courses in such topics as foreign language and calculus. Recently, a student in Eldon was able to take a calculus course from Iowa State University via the ICN to fulfill entry requirements for Yale University. ICN full-motion video made it possible.

In addition to advanced placement courses, Iowa schools share classes that would not normally be available due to lack of teachers or resources. By being connected to the ICN, students throughout Iowa are able to share teachers and classes. ICN technology brings the world to Iowa students.

Iowans seeking degrees from the State Board of Regents universities have greater access to higher education opportunities through the use of ICN full-motion video. Numerous courses and degree programs are now available to citizens in previously under-served areas of the state. Students may take courses close to home instead of commuting to the university. Using ICN technology allows a single faculty member to provide instruction to multiple sites and

also saves the state, and ultimately Iowa taxpayers, money.

Private colleges and community colleges are also able to provide greater learning opportunities through the use of ICN services. Drake University in Des Moines offers master's degree courses at ICN sites throughout the state. "I would not be in a master's program if it were not for the ICN because I have a full-time job and children, not to mention a financial status that would not allow me to take a leave of absence and go to school during the day. I would also have to relocate, at least temporarily, since the closest university is 80 miles away," said one student in Drake's master of science in education program.

Community college classes offered via the ICN enable students to stay close to home as they further their education. One adult student working on a bachelor's degree from Graceland College in Lamoni was able to take night classes at an ICN site in Creston. "Since I work in a small town and have a family, the ICN has been beneficial," commented the student. Because of the availability of ICN technology the student avoided the inconvenience of an hour drive to the main campus and was able to spend more time with his family.

A look at the opportunities that ICN services provide to students at every level in the life-long learning process proves that if you can imagine it, you can do it.

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Executive Summary

Distance learning is not a new phenomenon. With the development of the postal service in the 19th century, commercial correspondence colleges provided distance education to students across the country. This trend continued well into the 20th century with the advent of radio, television, and other media that allowed for learning at a distance. In the last decade, distance education has changed significantly with the use of computer-mediated learning, two-way interactive video, and a variety of other technologies. Colleges and universities are forging ahead to provide learning at a distance, and many institutions are making substantial investments in new technologies for teaching.

What impact is all of this technology having on the educational effectiveness of colleges and universities? The amount of written material devoted to distance education is extensive, and includes policy papers, "how to" articles, and essays, as well as a limited, though not insignificant body of original research. With few exceptions, the bulk of these writings suggests that the learning outcomes of students using technology at a distance are similar to the learning outcomes of students who participate in conventional classroom instruction. The attitudes and satisfaction of students using distance learning also are characterized as generally positive. Thomas Russell, in his recently published annotated bibliography entitled *The No Significant Difference Phenomenon*, lists hundreds of sources that seem to bolster these arguments. However, a closer look at the evidence suggests a more cautious view of the effectiveness of distance education.

The purpose of this analysis is to examine the research on distance learning more closely so that public policy may be better informed. What are the findings of the research on the effectiveness of distance education? Are they valid? Are there gaps in the research that

require further investigation and information? What does the literature suggest for the future? These questions are becoming more important as pressure grows—both from within and outside the academy—to use technology as a primary method for delivering higher education. To explore these issues in more detail, the American Federation of Teachers and the National Education Association commissioned The Institute for Higher Education Policy to conduct a review of the current research on distance education. Specifically, this report:

- ▶ Reviews the findings of the original research and assesses the overall quality of the analysis;
- ▶ Identifies gaps or omissions in the body of original research; and
- ▶ Discusses the implications of the research.

The scope of this review is limited to written material published during the 1990s, and particular attention is focused on those types of technologies currently being used by the majority of institutions. This paper concentrates primarily on an evaluation of the original research—including experimental, descriptive, correlational, and case studies—and summarizes the key information and findings of the other policy papers, articles, and essays that dominate the literature. While this review of original research does not encompass every study published since 1990, it does capture the most important and salient of these works.

What Does the Original Research Say About the Effectiveness of Distance Learning?

It is important to emphasize that, despite the large volume of written material concentrating on distance learning, **there is a relative paucity of true, original research dedicated to explaining or predicting phenomena related to distance learning.** From this more limited group of original research, three broad measures of the effectiveness of distance education are usually examined. These include:

- ▶ Student outcomes, such as grades and test scores;
- ▶ Student attitudes about learning through distance education; and
- ▶ Overall student satisfaction toward distance learning.

Most of these studies conclude that, regardless of the technology used, distance learning courses compare favorably with classroom-based instruction and enjoy high student satisfaction. For example, many experimental studies indicate that students participating in distance learning courses perform as well as their counterparts in a traditional classroom setting. These studies suggest that the distance learning students have similar grades or test scores, or have the same attitudes toward the course. The descriptive analysis and case studies focus on student and faculty attitudes and perceptions of distance learning. The purpose of many of these types of research is to develop recommendations to improve distance learning. These studies typically conclude that students and faculty have a positive view toward distance learning.

A closer look at the research, however, reveals that it may not be prudent to accept these findings at face value. Several problems with the conclusions reached through this research are apparent. The most significant problem is that **the overall quality of the original research is questionable and thereby renders many of the findings inconclusive.**

The findings of the original research must be read with some caution. Assessing the quality of the original research requires a determination that the studies adhered to commonly accepted principles of good research. The analysis is much more than an academic exercise. These principles are essential if the results of the studies are to be considered valid and generalizable. If a study does not abide by these principles, the results can be erroneous or misleading, and therefore lead to conclusions that result in poor public policy.

What Are the Key Shortcomings of the Research?

The analysis has found that there are several key shortcomings of the original research on the effectiveness of distance learning. These include:

► ***Much of the research does not control for extraneous variables and therefore cannot show cause and effect.***

Lack of control for extraneous variables is a major shortcoming that pertains particularly to experimental research, where the researcher attempts to compare the outcomes of a control group with the outcomes of an experimental group. Most experimental studies of distance learning are designed to measure how a specific technology—the “cause”—impacts upon some type of learning outcome or influences the attitudes of the course by

students—the “effect.” To accurately assess this relationship, other potential “causes” must not influence the measured outcomes. In almost all of the experimental research reviewed for this paper, there was inadequate control of extraneous variables.

► ***Most of the studies do not use randomly selected subjects.***

The single best way of controlling for extraneous variables is to assign students randomly to both the experimental and control groups. However, many of the published studies reviewed used intact groups for comparison purposes. As a result, these studies run the risk of having a number of variables affecting academic achievement or student satisfaction, not just the technology used to provide the education at a distance.

► ***The validity and reliability of the instruments used to measure student outcomes and attitudes are questionable.***

An important component of good educational research relates to proper measurement of learning outcomes and/or student attitudes. In short, do the instruments—such as final examinations, quizzes, questionnaires, or attitude scales—measure what they are supposed to measure? A well-conducted study would include the validity and reliability of the instruments so that the reader can have confidence in the results. In almost all of the studies reviewed, this information was lacking.

► ***Many studies do not adequately control for the feelings and attitudes of the students and faculty—what the educational research refers to as “reactive effects.”***

Reactive effects are a number of factors associated with the way in which a study is conducted and the feelings and attitudes of the students involved. One reactive effect is known as the *Novelty Effect*, and refers to increased interest, motivation, or participation on the part of students simply because they are doing something different, not better *per se*. Another, called the *John Henry Effect*, refers to control groups or their teachers feeling threatened or challenged by being in competition with a new program or approach and, as a result, outdoing themselves and performing well beyond what would normally be expected. In many studies, precautions were not taken in the research to guard against these effects.

What Are the Gaps in the Research That Require Further Investigation and Information?

Notwithstanding the fact that the overall quality of the research needs improvement, there are several important issues regarding the effectiveness of distance learning that require further investigation and information. These gaps must be filled so that public policy discussions are based on accurate and adequate information. Specific issues include:

A. The research has tended to emphasize student outcomes for individual courses rather than for a total academic program.

A major gap in the research is the lack of studies dedicated to measuring the effectiveness of total academic programs taught using distance learning. Virtually all of the comparative or descriptive studies focus upon individual courses. This raises important questions about whether a total academic program delivered by technology compares favorably with a program provided on campus. In addition to cognitive skills, and verbal, quantitative, and subject matter competence, outcomes with regard to critical thinking skills, attitudes and values, moral development, etc. need to be addressed.

B. The research does not take into account differences among students.

A substantial portion of research on distance learning has been conducted to demonstrate no significant difference in achievement levels between *groups* of distance and traditional learners. However, there is wide variance of achievement and attitudes within the groups, which indicates that learners have a variety of different characteristics. The factors influencing these differences could include gender, age, educational experience, motivation, and others. Gathering samples of students and amalgamating them into averages produces an illusory “typical learner,” which masks the enormous variability of the student population. Further research needs to focus on how individuals learn, rather than how groups learn.

C. The research does not adequately explain why the drop-out rates of distance learners are higher.

In a number of studies, there was evidence that a higher percentage of students participating in a distance learning course tended to drop out before the course was completed compared to students in a conventional classroom. The issue of student persistence is troubling because of both the negative consequences associated with dropping out, and

the fact that the research could be excluding these dropouts—thereby tilting the student outcome findings toward those who are “successful.”

D. The research does not take into consideration how the different learning styles of students relate to the use of particular technologies.

Understanding of how the learner, the learning task, and a particular technology interact is limited. Learner characteristics are a major factor in the achievement and satisfaction levels of the distance learner. Information regarding a student's preferred learning style will influence how the course is designed and the type of technology to be used. Additional research could result in more information regarding why different technologies might be better suited for specific learning tasks.

E. The research focuses mostly on the impact of individual technologies rather than on the interaction of multiple technologies.

Much of the literature on distance learning focuses on one technology and either describes its effectiveness and/or compares it to the conventional classroom experience. Most technologies, however, are multifunctional and can be adapted to address a wide range of learning outcomes. Unfortunately, there are few studies that examine more than one technology—and the synergistic effects of certain technologies—in addressing specific educational outcomes and student groups. The few studies that are available do not provide ample grounds for generalization because of a range of limitations, including small sample sizes and lack of sufficient explanation of the instructional treatment.

F. The research does not include a theoretical or conceptual framework.

There is a vital need to develop a more integrated, coherent, and sophisticated program of research on distance learning that is based on theory. Theory allows researchers to build on the work of others and, therefore, increase the probability of addressing the more significant questions regarding distance learning. Using theory as a guiding framework also allows the research to be replicated and enhances its generalizability, making individual studies more meaningful.

G. The research does not adequately address the effectiveness of digital “libraries.”

Students participating in distance learning, particularly those in remote locations, are often introduced to a digital “library” that provides access to bibliographies, as well as full-

text, of a variety of resources. The library is at the core of the higher education experience and, especially at the graduate level, is an integral part of the teaching/learning process. Some digital libraries boast an enormous array of resources, with the implicit notion that they can provide the same service as the traditional library. But do digital libraries provide adequate services for the academic programs they are established to support? Anecdotal evidence seems to suggest that the curriculum objectives of some distance learning courses have been altered because of a limited variety of books and journals available from the digital library.

Implications

Research on distance learning has been driven by what many are calling the “information revolution.” Advances in technology offer both the general public and faculty a dizzying array of challenges that are unprecedented. Technology is having, and will continue to have, a profound impact on colleges and universities in America and around the globe. Distance learning, which was once a poor and often unwelcome stepchild within the academic community, is becoming increasingly more visible as a part of the higher education family. But the research and literature reviewed for this paper indicate that the higher education community has a lot to learn regarding how, and in what ways, technology can enhance the teaching/learning process, particularly at a distance.

There are at least three broad implications that can be derived from this review of the original research and the other literature. The first is that the notion of “access to college” in the distance learning context is unclear. Many of the advocates of distance learning tout access to college-level education as a *raison d’être* for the proliferation of distance education. Indeed, in some states, public policy leaders are recommending using distance education in lieu of “bricks and mortar” learning. Of particular concern is access as it relates to the efficacy of computer-mediated learning. Unlike two-way interactive video, where students and the instructor can see and talk to each other in a conventional classroom, computer-mediated learning requires special skills of students and more sophisticated technical support if students are to interact fully. Questions that need to be asked include: What is the “quality” of the access? Does the student have the necessary skills to use the technology? What are the best ways to participate in asynchronous communication? Is there adequate technical support? Perhaps most important, will the cost of purchasing a computer and maintaining software be prohibitive for a substantial number of students?

Second, it seems clear that technology cannot replace the human factor in higher education. Faculty involved in distance education find themselves being a combination of content experts, learning process design experts, process implementation managers, motivators, mentors, and interpreters. In short, technology "can leverage faculty time, but it cannot replace most human contact without significant quality losses," as one expert has stated.

Third, although the ostensible purpose of much of the research is to ascertain how technology affects student learning and student satisfaction, many of the results seem to indicate that technology is not nearly as important as other factors, such as learning tasks, learner characteristics, student motivation, and the instructor. The irony is that the bulk of the research on technology ends up addressing an activity that is fundamental to the academy, namely pedagogy—the art of teaching. To that extent, the research has had a salutary effect in that a rising tide lifts all boats. Any discussion about enhancing the teaching/learning process through technology also has the beneficial effect of improving how students are taught on campus.

In a sense, the discussion has come full circle. The research on distance learning has a long way to go, and much of it is inconclusive. On the other hand, technology has helped the academy to continue its focus on the essential goals of teaching and learning. As a result, either implicitly or explicitly, the key question that needs to be asked is: What is the best way to teach students?

Introduction

Distance learning is not a new phenomenon. With the development of the postal service in the 19th century, commercial correspondence colleges provided distance education to students across the country. This trend continued well into the 20th century with the advent of radio, television, and other media that allowed for learning at a distance. In the last decade, providing education at a distance has changed significantly as the use of computer-mediated learning, two-way interactive video, and other technologies has increased. Many universities are making substantial investments in new technologies for teaching.

What impact is all of this technology having on the educational effectiveness of colleges and universities? William Wulf, professor of engineering and applied science at the University of Virginia, makes the following observation about this issue:

"Universities are in the information business, and technological developments are transforming that industry. University professors from a variety of disciplines have helped create the technologies that are forcing many U.S. industries to reinvent themselves, have advised industry leaders on how to adapt, and have analyzed the importance of changes for society. But it is harder to look inward to the university and to think about whether it might change in dramatic ways."¹

In recent years, colleges and universities have spent a great deal of time and effort in looking inward to analyze the efficacy of learning through the use of technology. This includes policy papers, "how to" articles, and essays, as well as a limited, though not insignificant body of original research. With few exceptions, the bulk of these writings suggests that the learning outcomes of students using technology at a distance are similar to the learning

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EDUCATION**

Distance Education Demonstration Program

Certain provisions of the Higher Education Act (HEA) prohibit or limit the eligibility of institutions and/or students participating in Distance Education Programs to receive federal student financial assistance under Title IV of the Act. The 1998 amendments to the HEA authorize the Secretary to select up to 15 institutions and/or systems or consortia of institutions to participate in a Distance Education Demonstration Program designed to help determine the most effective way of delivering quality education via distance education, the specific student aid requirements which should be altered to provide greater access to distance education programs, and the appropriate level of federal assistance for students in distance education programs. The Secretary may waive specified statutory and regulatory provisions that would otherwise bar or limit the participation of the institutions, systems or consortia. The HEA of 1998 permits Western Governors University to participate in the Program irrespective of the statutory or regulatory provisions which would otherwise preclude participation.

- [Press Release- New Ed Projects Promote Distance Learning For College](#) NEW
- [Distance Education Demonstration Program Legislation](#) (Title IV, Part G, Sec.488)
- [Final Federal Register Notice Inviting Applications for Participation in the DEDP](#), February 4, 1999
- [Data Collection](#)
- [Distance Learning Regional Meetings - Federal Register Notice Announcing DEDP Regional Meetings](#), February 8, 1999 (no pre-registration required)
- [Distance Education Demonstration Program-- Resource Links](#)

This page last modified June 30, 1999 by [jls]

Send e-mail to DistanceDemo@ed.gov



[Return to OPE News and Initiatives](#)

FOR RELEASE

June 25, 1999

Contact:

Stephanie Babyak (202) 401-2311

Jane Glickman (202) 401-1307

NEW ED PROJECTS PROMOTE DISTANCE LEARNING FOR COLLEGE

U.S. Education Secretary Richard W. Riley today announced the selection of 15 postsecondary schools, systems and consortia that will have an opportunity under a new program to enhance access to federal student aid for their distance education students pursuing college-level academic studies and training.

These selections are the first to be made under the Distance Education Demonstration Program, which was authorized last fall by the Higher Education Amendments of 1998. The 15 participants are comprised of 118 institutions located in 17 states.

"Distance education has great potential to broaden education opportunities universally, but especially for working parents, students who live in rural areas, and students with disabilities that may limit their access to the traditional campus setting," Riley said. "Recent advances in technology and use of the Internet have resulted in a spectacular growth in distance education and present us with a twofold challenge: to ensure that students pursuing high quality distance learning programs have access to federal student aid, and at the same time, to ensure the integrity of the federal student aid programs. These projects will help us accomplish both goals by testing new ways of delivering federal aid to students involved in distance education programs."

According to statistics for the fall of 1998, distance education courses were offered by 90 percent of all higher education institutions enrolling more than 10,000 students and 85 percent of schools with enrollments between 3,000 and 10,000 students.

Under the federal student aid programs (Title IV of the Higher Education Act of 1965, as amended), there are a number of statutory and regulatory provisions that limit the eligibility of distance education students to receive financial assistance. The 15 participating schools, systems, and consortia will receive waivers from one or more of these requirements. In addition, some of the participants will be testing new models for delivering federal financial aid to their distance education students.

The Distance Education Demonstration Program will involve two waivers of legislative provisions authorized by the HEA:

- the statutory rule that makes ineligible for student aid those schools that enroll 50 percent or more of their students in distance education programs or offer 50 percent or more of their courses via distance education. This waiver will make it possible for virtual universities (those that offer all courses and programs at a distance) to gain eligibility and others to significantly expand their distance education programs;
- the statutory rule that requires that an academic year consist of a minimum of 30 weeks for students to receive the maximum federal financial aid. This waiver will permit qualified students who complete an equivalent amount of work in a shorter period of time to receive full aid for direct expenses. It will also simplify the administration of student aid for the participating schools that offer instruction which is not based in standard units of time such as semesters.

Waivers will also be granted for some Title IV regulations relating to the administration of student aid to facilitate arrangements such as:

- collaborations between two- and four-year institutions that will allow a student with an associate degree from a community college to complete a baccalaureate degree via distance education. A feature of several of these projects is that the community colleges will continue to provide student

services during the period of baccalaureate study. This will allow students who find it difficult to pursue a baccalaureate degree on a campus to earn the degree at a distance, and still have local access to the student services that provide the support they may need to complete a degree;

- sharing of distance education courses among consortia members will allow schools to offer a wider range of courses to both distance education and on campus students than individual schools could offer on their own;
- enrollment tracking to verify status of students taking courses at several institutions simultaneously. Accurate enrollment information is essential for calculating a student's eligibility for aid; and
- calculating a student's cost of attendance by limiting costs to tuition, fees, and books and supplies -- excluding living expenses -- to help determine the appropriate amount of Title IV aid for distance education students.

These 15 demonstration projects will be carefully monitored by the department to test the quality and viability of expanded distance education programs while maintaining oversight against fraud and abuse. These projects are expected to continue for five years, and an additional 35 projects may be added for the third year of the program.

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NOTE TO EDITORS: Following is the list of 15 schools and consortia selected in the Distance Education Demonstration Program. For a complete list of institutions within each consortium, call contacts listed above at the Office of Public Affairs.

Distance Education Demonstration Program Selected Applicants

LDS Church Education System
Provo, Utah

Contact: Dr. Cheryl Brown, **e-mail:** Cheryl_Brown@byu.edu, **phone:** 801-378-4916.
(This consortium consists of four institutions in Hawaii, Utah and Idaho)

Capella University (formerly The Graduate School of America)
Minneapolis, MN

Contact: Paul F. Clifford, **e-mail:** clifford@minn.net, **phone:** 612-339-8650.

Colorado Community Colleges & Occupational Education System
Denver, CO

Contact: Carol Linsley, **e-mail:** Carol.linsley@cccs.cccoes.edu, **phone:** 303-595-1561.
(This consortium consists of 13 community colleges in Colorado)

Connecticut Distance Learning Consortium
New Britain, CT

Contact: Ed Klonoski, **e-mail:** eklonoski@mail.cosc.edu, **phone:** 860-832-3886.
(This consortium is comprised of 23 institutions in Connecticut)

Florida State University
Tallahassee, FL

Contact: Dr. Alan Mabe, **e-mail:** amabe@mailers.fsu.edu, **phone:** 850-644-3500.

Franklin University
Columbus, OH

Contact: Paul J. Otte, **e-mail:** otte@franklin.edu, **phone:** 614-341-6234.

Masters Institute
San Jose, CA

Contact: Linda Tyler, **e-mail:** Ltyler@mastersi.edu, **phone:** 408-346-2702.

New York University
New York, NY

Contact: Antonio Del Bono Jr., **e-mail:** antonio.delbono@nyu.edu, **phone:** 212-998-4483.

North Dakota University System
Grand Forks, ND

Contact: James M. Shaeffer, **e-mail:** jim_shaffer@mail.und.nodak.edu, **phone:** 701-777-3231.
(Consists of 11 institutions in North Dakota)

QUEST Education Corp.
Davenport, IA

Contact: Robin Throne, **e-mail:** rthrone@aicedu.com, **phone:** 319-355-3500.
(Includes Hamilton College and the American Institute of Commerce, both in Iowa)

Southern Christian University
Montgomery, AL

Contact: Anita Crosby, **e-mail:** AnitaCrosby@southernchristian.edu, **phone:** 800-351-4040 ext. 218

Southwest Consortium for the Advancement of Technology in Education
Lubbock, TX

Contact: Ken Woods, **e-mail:** kwoods@scate.net, **phone:** 915-235-7326.
(comprised of 14 schools in Texas and New Mexico)

University of Maryland University College
College Park, MD

Contact: Anne S. Perkins, **e-mail:** aperkins@umuc.edu, **phone:** 301-985-7953.

Washington State University (Pullman, WA) and

Washington Community and Technical College Online Consortium (Tacoma, WA)

Contacts: Wayne Sparks, **e-mail:** wsparks@wsu.edu, **phone:** 509-335-1305

Kate Bligh, **e-mail:** kbligh@tcc.tacoma.ctc.edu, **phone:** 253-566-6006.

(consists of 44 colleges in Washington)

Western Governors University
Aurora, CO

Contact: Robert C. Albrecht, **e-mail:** balbrecht@wgu.edu, **phone:** 303-365-7558.

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Immediate Release

August 26, 1999

VICE PRESIDENT AL GORE ANNOUNCES \$10 MILLION IN GRANTS TO
EXPAND OPPORTUNITIES FOR ADULT LEARNERS

Washington, DC -- Americans struggling to balance work and family and still get the education they need to get ahead will find new educational opportunities more accessible thanks to \$10 million in new federal grants to expand access to high quality education for adults, announced today by Vice President Al Gore.

The new funds will be provided by the U.S. Department of Education's "Learning Anytime Anywhere Partnerships," (LAAP). Under LAAP, colleges, universities, companies, and non-profit organizations join together to expand access to high-quality learning opportunities students can access "anytime, anywhere" for example through the Internet. This is particularly important for adults, who often find it difficult to participate in traditional classroom-based instruction because of the competing demands of work and family.

"All Americans deserve access to educational opportunities that will help them get ahead. We must make it possible for adults to learn at a time, pace, and location that works around the constraints of their daily lives," said Vice President Al Gore. "At a time when what you earn depends on what you learn, we need to promote innovative ways of educating Americans so that they can compete for the high-wage, high-skill jobs that our economy is creating in record numbers." LAAP is especially designed to help students in underserved geographic areas, who have limited access to the traditional college campus setting, and who need more flexible education and training opportunities to keep pace with changes in the job market. Simultaneously, the program helps meet the current critical needs of business and industry.

The LAAP grants may be used to develop:

- Model programs and software that will make distance learning possible;
- Innovative on-line student support services such as job placement, academic counseling, and library services.
- New institutional policies and practices that go beyond merely putting more courses online but truly deliver programs that are self-paced alternatives to traditional semester scheduling.
- Methods of assessing the quality and success of these new distance learning programs by charting the skills and competencies achieved by students, as well as retention and completion rates.

LAAP grants are awarded to partnerships involving two or more institutions of higher education, community organizations, businesses, and other public and private agencies. Partnerships stimulate resource sharing, reduce program duplication, and promote economies of scale. Examples of the grants include:

- The National Telecommuting Institute will develop an at-home training program that will prepare people with severe disabilities to perform customer service jobs in "e-commerce" from their homes using the Internet.
- The Hispanic Educational Telecommunications System (HETS) will create a virtual learning community composed of students, faculty, counselors and professionals. HETS will

pool faculty and staff to develop workforce training and counseling as well as courses for academic credit. The project will serve an estimated 100,000 students enrolled through the nation's Hispanic Serving Institutions.

-- The College of the Mainland in Texas project will partner with some 30 Gulf Coast petrochemical companies to develop a program for industry workers to refresh their skills, learn new technologies and safety precautions, or earn an associate's degree.

LAAP grantees are required to provide 50 percent of the total project costs. The total federal funding for these grants is \$35 million over the next five years. However the 29 grantees have generated \$60 million to support their projects for a total public and private investment of roughly \$95 million over a five-year period. More information on the grants is available on the World Wide Web at <http://www.ed.gov/offices/OPE/FIPSE/LAAP>

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The Campus and Course Portal: A View from 2015

By Matthew Pittinsky, Chairman, Blackboard Inc.

*In a world of lifelong learning, Web sites that aggregate courses become
"campus's away from home"*

Like the debates over course evaluations in tenure, it's strange to think how quickly what seems like a major change in higher education can become commonplace. I remember back in the 1990's when, if you'd gather a diverse group of campus representatives, each would have a different definition of what the term "online learning" *really* meant.

To one faculty member, it might have been as simple as a course Web site where she could post a syllabus and additional learning materials for access by all of the students in her course. To another, it was a vehicle for enabling communication and collaboration through discussion boards and chat rooms beyond the two times the class met each week. To a third, it was the key to a distance learning approach that allowed for the delivery of a specialized course around the world, using audio video and interactive learning resources, to students many of whom would never normally have been able to visit campus. For a president or CFO, it was an opportunity to achieve a ROI for millions of dollars in network and other technology investments by implementing an education vehicle such as Blackboard that helped faculty and students connect in more powerful ways, and expand the institution's horizon.

In all cases, I remember one theme that emerged again and again. At its core, online learning was driven by ways academe could leverage the campus Intranet and world wide Internet to support and extend the physical campus and classroom learning environment. Once considered a fad and stand-alone project, most university information technology administrators now consider online learning to be the turning point in a broader trend towards greater utilization of Academic Computing and instructional technologies. But at a time when the "Internet Changed Everything," online learning was clearly the catalyst that pushed academic computing and student support to the top of the higher education's agenda.

The Creation of Campus Portals

But that change did not come without unintended consequences. For example, an Internet term once coined to describe search engines – the "portal" – slowly became a familiar term for instructors and learners. A portal is a gateway to the entire Internet and an aggregator of information on one or more areas of interest. In the education context, two types of portals have come to define how universities tackle the online education opportunity – Campus Portals and Course Portals. For students, both portal types

fundamentally changed the way they selected and experienced their institutions and courses.

“Campus Portals,” powered by an enterprise online education system such as Blackboard, are Web based learning environments that provide a third dimension to the physical campus. By enabling faculty to manage CourseSites which provide access to course materials, discussion boards, chat rooms, and assessments, Campus Portals extend the classroom into a 24-hour learning community accessed from dorm rooms, study labs, homes and the workplace. When combined with digital libraries, personalized calendars, online advising, eCommerce and other services, Campus Portals enable a university to enhance on campus programs and deliver online distance learning alike. It also helps keep alums connected to the institution.

From Campus Portals to Course Portals

While brand, accreditation and the campus experience were not nearly as redefined by Campus Portals as once feared – indeed they enhanced the campus – the market for lifelong learning has changed some of the ground rules. Now considered commonplace, the rise of a second portal type – “Course Portals” – creates unique central aggregation sites for standalone courses offered by colleges and universities independent of their physical Campus or Campus Portal. In contrast to the Campus Portal’s approach of offering courses only through the university’s direct campus or URL, and available only to matriculated students, Course Portals take a different approach. By aggregating standalone courses from multiple institutions into a single site that emphasizes subject and student experience, Course Portals provide a one-stop shop for lifelong learners to explore a subject based on the best course that meets their needs.

Just as Campus Portals remove some of the traditional barriers of time and place, Course Portals have evolved as the logical delivery approach for 3,600 colleges and universities who offer mostly overlapping programs, but previously were protected by geography. To avoid duplicative and unfocused distance learning campuses, each institution leverages its unique subject expertise, index its course, and leaves the marketing and eCommerce to the Course Portals like Blackboard.com. For the institution, Course Portals have become partners, driving tremendous learner traffic to a select number of courses typically developed for non-degree students who are motivated by the passion for learning. Through a revenue sharing model that is indexed against successful enrollment, the cost structure is clearly a win-win.

From a student’s perspective, Course Portals have become oracles of knowledge where the instructor and course experience matter most, not physical campus, brand name or selectivity of admissions. To be sure, accredited degree programs continue to be the focus of a learner’s development as they have been for over 400 years. But when the student interest is professional or personal – grounded in curiosity or skill – the Course Portal’s model of cross institution course aggregation provides the broadest array of quality courses available.

The Technology Drivers

To be sure, taking 15 years to evolve a portal model is not exactly overnight on Internet time. The rise of Campus Portals and Course Portals has taken almost a lifetime when compared with the rise of portals that redefined retail, travel, brokers, and other markets. Irony of ironies, higher education was the first to be wired and one of the last to be truly impacted by the networked age.

Indeed, as of 1990, the cables and ports necessary for an advanced on-campus Intranet and worldwide Internet were laid. Yet a Campus Computing report at the time noted that only 25% of courses used the World Wide Web for instructional purposes. While it is hard to imagine another industry as wired as higher education, the core mission of the enterprise – e.g. teaching and learning – remained a small fraction of the network's daily usage. The culprit? Institutions of higher education lacked a comprehensive online learning environment with which they could create, deliver and manage teaching and learning activities over the campus Intranet and world wide Internet.

On the administrative side of higher education, years of investment had finally resulted in a modernization of the back office systems and broader access to university resources. What was once a software category dominated by home grown systems and specialized stand alone products, had evolved into comprehensive, enterprise-wide packaged systems that integrated modules for alumni affairs, human resources, financials, and student services together into one platform.

On the academic side, the lessons of administrative computing seemed to be replaying themselves. The traditional model required every institution – indeed, every instructor – to develop from scratch the features and functionality of online learning environments. Since pedagogical preferences must be unique to every instructor – a proposition I wholeheartedly support – the presumption was that every aspect of an online learning platform must also have been developed from scratch, regardless of the commonality of features set as gradebooks, assessment engines, discussion boards and the like.

The result? An online learning tower of Babel that created a fragmented academic computing landscape on most college campuses. Faculty who were not technically adept enough to develop their own online learning environments were discouraged from using the Web. Campus IT administrators were prevented from focusing on instructional design, as they expended precious financial resources supporting multiple, incompatible platforms.

But here we are. Online education platforms are as common as administrative systems. While we are repeating much of the debate around online education as new forms of virtual reality take hold, the role that technology can play on the instructional side has become firmly rooted in the curriculum and pedagogical approaches of faculty. The power that has been unleashed by Course Portals for learners who have graduated from higher education is truly democratic. Indeed, it has helped create a marketplace of ideas unseen in the academy for a long time. And Campus Portals, the online learning

environments that enhance and extend the campus experience, are remembered as fondly as the greenleaf quad.....

Andy Kolkerham -
we should promote
this. -BR

MONDAY, NOVEMBER 2, 1998

The New York Times

More Colleges Plunging Into Uncharted Waters of On-Line Courses

By KAREN W. ARENSON

Spurred by fierce competition for students, colleges and universities from Florida State to New York University are plunging headlong into the rapidly evolving world of on-line education, a world that barely existed five years ago.

In recent years, technologically adventurous professors worked the Internet into their courses, posting the syllabus or readings, sometimes responding to student queries. Some of the more proficient put courses on line. But only recently have universities begun to offer whole programs and degrees on line — the 1990's version of a correspondence course.

No college can be certain whether the programs will attract enough

Faculty rights and pay for classes over the Internet are issues.

students to justify the considerable expense — \$50,000 or more to create and support each class. But officials say that if they do not stake out territory now, someone else will.

"This is the hottest and most sweeping development I've ever seen," said James H. Ryan, a vice president at Pennsylvania State University, who has been in higher education for 35 years. "It's like being in a roller coaster; it's a thrill a minute."

But even as universities stampede onto the Internet, significant questions have yet to be answered. How good is the education? Who owns the courses — the university or the professors who create them? How should faculty members be paid? What works best in on-line teaching? And will a degree from a virtual university be worth the actual paper it is printed on?

Frank Mayadas, a program officer at the Alfred P. Sloan Foundation in New York, which has financed programs to improve on-line teaching, said the picture was mixed.

Some on-line degrees, like Stanford University's master's degree in electrical engineering or Drexel University's master's in information systems, are sound, Mr. Mayadas said. But he is skeptical that other offerings will endure.

"The predictability we associate with higher education institutions isn't there yet," he said, "and it needs to be there for this to become a credible source of education."

Still, on-line classes are a considerable step up from correspondence schools. Internet bulletin boards function as virtual classrooms for students and teachers who can participate at any time, from anywhere. Instructors post lectures and assignments; students turn in papers and tests and discuss their studies with classmates and professors in on-line conferences.

Michele Acuna of Saugus, Calif., a 34-year-old mother with two teenagers who is working on a bachelor's degree from the University of Phoenix, signs on almost every day to the Hewlett Packard computer in her bedroom for a communications course. Her professor is in Utah.

"I do a lot at night when my children are in bed," she said. "That's the beauty of this stuff — you can do it at 3 A.M."

No one knows exactly how many colleges operate on the Internet. But what is clear is that the trend is picking up speed nationwide:

■ New York University announced this month an audacious plan to create a profit-seeking subsidiary to market Internet courses. The venture would allow N.Y.U. to raise millions of dollars through a stock offering or private partnerships.

■ The University of Phoenix, a for-profit behemoth that has officials at many traditional universities scared because of its rapid spread through campuses around the United States as well as on-line, has nearly 5,000 students in its on-line program, more than double the number two years ago.

■ Western Governors University, an on-line college sponsored by 17 states and Guam, was started this fall to improve access to college education for adults and to help accommodate an expected crush of students without building classrooms. The university offers associate's de-



Kim Kulsh for The New York Times

Michele Acuna of Saugus, Calif., is working on a degree from the University of Phoenix, on line. "I do a lot at night when my children are in bed," she said. "That's the beauty of this stuff — you can do it at 3 A.M."

grees in liberal arts and applied science.

■ The California Virtual University, a consortium of nearly 100 California universities and colleges, opened this fall with more than 1,600 on-line courses.

■ The Open University — Britain's 29-year-old pioneer in distance education for college students — has applied for American accreditation and is striking cooperative agreements with universities like Florida State University.

■ Penn State established its on-line "World Campus" in February with just four courses and expects to have 30 courses by next February.

■ Florida State will begin offering courses next fall for a bachelor's degree, but will concentrate on course work for juniors and seniors.

The proliferation of on-line programs has many traditional educa-

tors scratching their heads. A committee of the American Association of University Professors concluded last year that on-line learning could be "a valuable pedagogical tool to increase access to higher education." But it warned that developments could compromise traditional notions of academic quality, academic freedom, intellectual property rights and instructors' workloads and compensation. In some cases, long-standing safeguards of faculty members' rights may suffice, it said, but in others, those protections may need reworking.

Unlike a traditional classroom course, for which a professor creates and delivers each course, the professor becomes more dispensable on line after putting the course together in a form that can be sent out again and again. Another instructor can be assigned to answer questions and

grade papers.

Universities are creating different arrangements to determine who owns what. Penn State, for example, is splitting revenues with the faculty members who develop the courses and their departments, while New York University says its new subsidiary will hold ownership rights for the on-line courses.

The student body for most on-line courses is part-time, adult students in continuing education programs or full-time degree-seeking students who take most of their work in traditional classrooms. But the trend is to make it possible to earn a degree on line rather than just take a few individual classes.

Jeremy Carlo, a sophomore majoring in applied math and physics at the New Jersey Institute of Technology, took a computer science course on line in the spring when he could

not fit the regular course into his schedule. He found the flexibility a mixed blessing.

"It was nice that you didn't have to be somewhere from 4 to 5:30 twice a week," Mr. Carlo said. "The negative is that you really have to keep on top of the work."

Ms. Acuna is using her computer for all of her courses. She said she had always wanted a college degree. But as a single mother with a full-time job as an operations manager for a retail chain with night and weekend shifts, she could not commit to regular-class attendance.

She looked into several on-line programs before enrolling as a business major at the University of Phoenix. At \$370 a credit (\$465 for graduate work), Phoenix charges more than the local community college. Phoenix students typically take one course at a time for five weeks and then have a week off before starting the next.

The only requirement Ms. Acuna has not been able to fulfill at home was the university's entrance examination, which she took at a local Catholic school.

In her current communications course she and her five classmates read essays, write their own and comment on one another's work in teams — but talk about little else. There is no sense of a campus community, but she does not mind.

Now that Internet education is taking clearer shape, some university officials are taking a closer look at the business aspects.

Active marketing is a major component of the N.Y.U. plan. Rather than aiming to put all the courses it can on the Web, the university is hoping to start with a dozen or so niche courses — like computer and management courses that will be attractive to people in industry. As these courses bring in revenues, others will be added.

"On line is a big, important field in higher education, but it does not have a business model that works," said Gerald A. Heeger, dean of Continuing and Professional Studies at N.Y.U., who is directing the university's new on-line enterprise.

"The dirty, little secret is that nobody's making any money," Dean Heeger said. But someday they will, he said.

Citigroup President, Heir Apparent to Top Job, Quits Abruptly

By TIMOTHY L. O'BRIEN

James Dimon, the president of Citigroup, the world's largest financial services company, said yesterday that he would leave the company, a surprising move that raises questions about who will ultimately be tapped to manage the sprawling giant created by the recent merger of Citicorp and Travelers Group Inc.

Sanford I. Weill and John S. Reed, Citigroup's co-chief executives, had been expected to groom Mr. Dimon, known as Jamie, as their successor. But Mr. Dimon had difficulties integrating the brokerage firm Salomon Smith Barney — which Travelers created almost a year ago by acquiring the investment bank Salomon Brothers and merging it with its Smith Barney Unit — into Travelers.

Combining the disparate corporate businesses of Citicorp and Travelers is an even more daunting task, and at a retreat at the Greenbrier resort in West Virginia last weekend, employees voiced concerns about how well that process was proceeding.

At that point, according to a Citigroup spokesman, Mr. Weill and Mr. Reed decided it was time to institute a clearer chain of command for managing key businesses like investment banking and lending to big corporations — a new hierarchy that would have offered Mr. Dimon less authority at Citigroup than he wanted and

that ultimately led to his departure yesterday.

In a move that will most likely lead to layoffs, Citigroup said it planned to combine all corporate banking activities into one unit jointly overseen by Michael A. Carpenter, former chairman of Travelers Life and Annuity, and Victor J. Menezes, former president of Citicorp. Deryck C. Maughan, who once ran Salomon Brothers before Travelers bought it, will become a vice chairman of Citigroup in a less crucial role that the company described as devising and implementing corporate strategy.

"This represents a very surprising move in the management of a key component of Citigroup, because I think most people assumed Jamie would be one of the two people running the corporate business, if not running it alone," said Diane Glossman, a banking analyst with Lehman Brothers Inc.

Moreover, the executive turmoil at Citigroup is evidence of the hurdles that must be overcome to make big mergers work despite abundant claims by corporations that size alone justifies these deals.

"I've said all along that successful mergers hinge on the quality of the execution," Ms. Glossman said. "If it were easy, everyone would do it."

In interviews yesterday, Mr. Reed, Mr. Weill, and Mr. Dimon all spoke amiably of one another and were

optimistic about the financial prospects of a global investment banking business. Mr. Reed described Citigroup's corporate business as "in a class of our own," compared with such robust competitors as Merrill Lynch and Goldman, Sachs.

Nonetheless, Citigroup recently posted a 65 percent drop in third-quarter earnings, largely because of big losses incurred in increasingly risky and volatile global financial markets. Of course, many companies have been battered by global economic turmoil, but such uncertainty only added to the need for Citigroup to put its corporate businesses in order.

The departure of Mr. Dimon, 42, ends a long and financially fruitful relationship with Mr. Weill in which the two men worked closely for more than a decade building Travelers from the ground up.

Both men spoke affectionately of each other yesterday. But some analysts and Travelers employees suspect that a certain distance has come between the two executives ever since Mr. Weill's daughter, Jessica M. Bibliowicz, left her post last year as head of the Travelers mutual fund business after a series of run-ins with Mr. Dimon over the management of that business.

Mr. Weill said yesterday that his daughter's departure was "absolutely not" a factor in Mr. Dimon's resig-

nation. "That happened a long time ago," he said.

Whatever discomfort existed because of that incident, neither Mr. Weill or Mr. Dimon were prepared for some of the trouble they encountered after Travelers bought Salomon Brothers last year. Mr. Weill recently closed Salomon's bond arbitrage business after the unit incurred \$15 million in trading losses.

In that regard, some analysts suggested that Mr. Dimon, widely regarded as an extremely capable executive, might be a scapegoat for Salomon's problems. Mr. Dimon, who lost his board seat in the merger, offered no indication of what he planned to do next.

Citigroup did not name a new president to replace Mr. Dimon, and Mr. Weill said there would not be a horse race between Mr. Menezes and Mr. Carpenter to fill that position.

Mr. Menezes is regarded by analysts as skilled in corporate politics and a capable, though not stellar, manager. Mr. Carpenter has won praise for his management of Travelers' life insurance and annuities business although he also ran Kidder Peabody & Company during the financial scandals involving Joseph Jett, the onetime bond-trading star.

What's Sunday without The Times?

Competence Without Credentials, March 1999

Competence Without Credentials: The Promise and Potential Problems of Computer-Based Distance Education

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Over the last decade, institutions of higher education, state and federal agencies, corporations, and the public at large have become increasingly interested in "distance" or "distributed" learning. Although there is considerable debate about what these terms mean, especially among proponents of different educational philosophies and technologies, almost everyone who is party to the debate agrees on the motivating premise. Whereas education has traditionally meant bringing students to sources of knowledge, the time has come to bring sources of knowledge to students.¹

Historians of education will quickly note that attempts to deliver education outside the walls of a classroom are not new. The extension divisions established by American agricultural colleges after the Agricultural Extension Act of 1914 were nothing less than a massive attempt to bring the fruits of modern agricultural science to farmers in their fields and communities. Numerous trade and technical schools have long offered credentials through correspondence courses. Educators viewed television, almost from its inception, as a means of educating students who need not set foot in the classroom. Since the 1960s, numerous colleges and universities have experimented with televised education, and some have had considerable success with television as a delivery medium. Stanford's Instructional Television Network (SITN), which has broadcast courses to people employed by firms inside and outside the Silicon Valley for almost two decades, and Britain's Open University, which was founded specifically to provide degrees at a distance, are notable examples. But even though the idea of distance education may not be new, the perception is widespread that it is only now entering an era of its own. The renewed promise of distance education rests on a confluence of economic and technological developments that are setting the context for the 21st century.

Why Is Distance Education Attractive?

Of central importance is the changing nature of work in the Western nations and Japan. Blue collar and clerical work in all industrial societies have declined significantly since the 1950s, while managerial, service, professional and technical work have steadily grown. At the beginning of the 20th century, 83 percent of all Americans held jobs that involved working with things (e.g., farmers, operators, laborers, or craftspeople). By the year 2000, this percentage will have been halved (41 percent). Conversely, the percentage of Americans whose jobs involve working with people or information (e.g., salespeople, managers, administrators, professionals, and technical workers) has expanded from 17 percent in 1900 to 59 percent today. The professional and technical workforce became the largest occupational sector in the United States in 1991 (Barley 1996a). In short, intellectual capital and knowledge work are rapidly replacing physical capital and production work as the source of economic prosperity (Stewart 1997). We seem to be witnessing the coming to pass of Bell's (1973) post-industrial economy.

The shift to knowledge and technical work has important implications for the role of education in society. To the degree that intellectual capital becomes pivotal to the economy, people will increasingly require higher levels of education if they are to be meaningfully, if not gainfully, employed. Because technical knowledge changes so rapidly, as work becomes more technical the need for continual training and retraining will escalate. In such a world, traditional models of education that require an extended

"time-out" from productive activity will prove increasingly unreasonable and expensive, especially for adult learners with families. In this new world of work, the economies that flourish will likely be those in which easily accessible education and lifelong learning also flourish.

Fundamental changes in the nature of work are not, however, the only developments driving experimentation with distance learning. The globalization of markets, coupled with the trend toward less hierarchical, more geographically distributed organizations, make it less feasible for firms to rely on the kind of centralized classroom training that has long been the stock and trade of corporate training and development. Furthermore, because technical practices change so quickly and because so much technical knowledge is contextual in nature, most schools and universities are poorly equipped to provide the kind of training and experience that a technical workforce needs to remain up to date. Indeed, technical workers routinely acknowledge that on the job they use very little of what they learned in school (Barley 1996b). A growing number of firms have therefore come to view distance education as a way of meeting the workforce's need for up-to-date information and continuing education. Distance education promises firms the option of providing training on an "as needed" basis to individuals on a wide range of topics, many of which could not be justified as part of a school's curriculum.

Ultimately, however, technological change may be the strongest reason for renewed interest in distance learning, for even though economic changes may have exacerbated the need for continual education, new technologies have created the opportunity and the means for addressing the need. Earlier approaches to distributed education constrained delivery in significant ways. Extension operations required the co-presence of teacher and student as well as a classroom in a remote location where students could assemble. Televised instruction eliminated the need for co-presence, but introduced problems of asynchrony. Students in televised courses were often unable to ask questions of teachers during the course of a lesson, if at all. Except in expensive, specially equipped facilities that enabled live, two-way broadcasts, distance learning via television was largely a passive activity.

The dramatic emergence of the Internet and, more recently, the World Wide Web, have suddenly created, at least in principle, a way of transcending many of the problems associated with earlier forms of distance education. Web technologies are capable of delivering text, data, images, audio, and video in an integrated and coordinated manner. Moreover, "chat" rooms that allow nearly synchronous e-mail exchanges, electronic whiteboards that allow people to co-produce drawings at a distance, and fledgling imaging technologies that bring two-way, live video to a computer screen (such as CUseme and Placeware's Auditorium) open the possibility of real-time exchanges, not only between students and teachers who are separated in space but among students who are themselves distributed. Finally, because computers are prevalent in the workplace, computer-based training (CBT) and Web-based training (WBT) can provide multiple users with access to training materials and to each other without anyone leaving their desks.

Proliferating Experimentation

The combined force of economic pressure and technological opportunity has encouraged schools and firms to experiment with Web-based distance education. The rapidity of the response is staggering. Easy access to the Internet has been available for less than a decade, and the advent of the World Wide Web is even more recent. Yet, numerous institutions of higher education have already targeted the market for distance education. In 1995, the governors of Colorado, Utah, and several other Western states established the Western Governors' University (WGU) with the purpose of exploiting information technologies to deliver higher education to students distributed over time and space (Epper 1996; www.westgov.org). Green (1997) reports that the University of Phoenix, which relies heavily on distance education of all forms, has become the second largest private university in the United States enrolling more than 31,000 students. The New School for Social Research in New York City now offers bachelor's degrees through its Distance Instruction for Adult Learning program (DIAL). Students can register for and take DIAL courses over the Internet, though many of the courses still require students to purchase books and other materials (www.dialnsa.edu/d_dial/d.htm). The Mind-Extension University (www.meu.edu) also offers degrees via the Internet.

Although most schools offering degrees on the Web are not household names, many better known

universities are also experimenting with computer-and Web-based instruction, at least on campus. Stanford's Engineering School has been particularly active in distance education. Stanford recently hired a cadre of technically trained curriculum support staff and assigned them to departments to work with faculty in developing courses for the Web. Approximately a quarter of all institutions of higher education responding to the 1996 National Survey of Information Technology in Higher Education reported that similar goals were of significant priority (Campus Computing Report 1996)

Firms and government agencies are also moving into distance education. A number of corporations, faced with the increasing need for continual training, a distributed workforce, and the promise of significant cost saving, have established distance learning programs. Some, such as Motorola and Sun, believe that training offers such a crucial competitive advantage that they have established their own "universities" for their employees. Within the federal government, the Department of Energy has been active in developing Web-based training, especially around issues of safety and the handling of hazardous materials.

Corporations with technical expertise have also begun to contract with their customers to provide them with distance-based training. IBM's Global Campus and the Lotus Institute, for example, not only offer distance learning software but assist in skills assessment, curriculum design, and certification (www.training.ibm.com, www2.lotus.com). In 1996, the Department of Defense awarded Sprint a \$50 million contract to develop a Tele-Video Training Network for the Army Training and Doctrine Command (press release, www.sprint.com). Netware Users International, an association of Novell networking professionals, currently offers training in network technology via the internet through CyberState University (Business Wire 1997). Through online courses, technicians can become Certified Novell Engineers, Certified Novell Administrators, and Microsoft Certified Systems Engineers. Ziff-Davis, a publisher of well-known computer magazines such as *PC Magazine* and *Windows Magazine*, caters to individual distance learners. Ziff-Davis runs the Internet-based ZDNet University which specializes in Web-based instruction in programming languages and software applications (www.zdu.com). For \$4.95 per month, students can take as many ZDNet courses as they want.

Finally, the advent of the Web and the increased need for training have spawned considerable entrepreneurial activity. The last several years have witnessed the founding of firms dedicated to developing software and hardware for supporting distance education, to building specific training modules, or to providing consulting assistance to firms that want to mount their own distance education programs.

Unanswered Questions

Although computer-based training and distance education hold considerable social and economic promise, it is important to recognize that the promise rests largely on high hopes for a fledgling set of technologies. As with most new technologies, the realities of implementing Web-based education are likely to be different than the proponents rhetoric implies. We know from studies of other technologies, such as word processing and computer-aided design, that anticipated benefits may be less easily achieved than originally thought (Sproul and Keisler 1991; Salzman 1992). Embedded practices and unanticipated side effects often slow technology diffusion, counteract intended consequences, and lead to undesirable secondary outcomes (Barley 1988). For instance, although firms claim that "intranets" will create efficiencies and change the way they do business, research currently being conducted by Francois Barr (Department of Communications) and Neil Kane (Department of Industrial Engineering and Engineering Management) at Stanford suggests that most firms that have constructed intranets are actually doing very little of significance with the technology.

Even if Web-based technologies do occasion a fundamental restructuring of the way education is delivered, doing so will, by definition, alter embedded institutional arrangements and cultural practices. If the goal is to provide greater access to knowledge and opportunity and if one believes that distributed education is key to achieving this goal, then failing to take institutional, demographic, and cultural issues into account may thwart the larger objective. At present, important practical, social, and institutional questions remain unanswered, in part, because of the speed at which Web-based technologies have been so enthusiastically embraced. Because the technologies driving the development are so new, researchers

have yet to study their use, and users have not had sufficient time to accumulate the wisdom of experience. Among the questions that need to be answered if we are to go beyond the rhetoric and realistically assess the future of distance education are the following:

- *How prevalent are the new forms of distance education?* We know that a number of highly visible schools and corporations are experimenting with computer and Web-based education, but we do not know how representative they may be. It would be useful to know the characteristics that distinguish corporations and schools that offer distance curricula from those that do not would be useful. We also do not know how many students or employees are actually taking advantage of opportunities for distance education and we know even less about the attributes of those students. Without such information we can not determine whether distance education is reaching those who might not otherwise have access to knowledge or simply reaching those who already take advantage of most other educational opportunities.
- *Are there practical and cultural barriers to distance learning?* Although many schools want to move into distance education, as Green (1997) has noted, most universities simply do not have the technological infrastructure, the financial wherewithal, or the technical talent to allow them do so in a concerted way. Similarly, even though a growing percentage of households have access to computers, access is highly stratified by socioeconomic class. Access may be similarly stratified among business organizations: larger, wealthier firms may be able to provide access to distributed education while smaller, less profitable firms may not. What are the implications of such stratification for the goals of distance education and how do we overcome these barriers?
- *What are the firms and schools that are experimenting with distance education actually doing, and what are they learning about using Web-based technologies?* Although firms and schools regularly report their general involvement with distance-education, there is little specific and systematic information about what any organization has actually done. More importantly, little is known about what firms have discovered about the limitations and opportunities of Web-based courses. Surfacing such data is critical for accurately assessing the potential of distance-based education and for fostering a community of practice around development.
- *How can we characterize the content of courses currently taught via Web-based education?* Due to the nature of the medium, we need to know which subjects are most amenable to Web-based education. Some limitations are likely to be technological. For instance, even though Web-based education can be a multimedia affair, technical and economic realities (such as bandwidth and cabling) are likely to pose constraints on implementation. Other limitations may be social. If early developers are technical people, then all else being equal, their courseware should highlight technical information. Finally, some limitations may be inherent in the medium itself. For example, technical skills are often difficult to learn except by doing, and some even require face-to-face interaction with more accomplished members of a community of practice (Orr 1997). It is difficult to comprehend how the Web could simulate such learning.
- *How does the context of distance learning differ from the context of more traditional forms of learning?* All teaching and learning takes place in a context. We know that the context of learning is crucial for educational outcomes. However, aside from pronouncements that learners need no longer travel to classrooms and that they can learn at their own pace, we know next to nothing about the context in which distance-based learning occurs. What sort of background knowledge do students need in order to locate appropriate courses and providers? When students take courses at their desk or at home, how does the immediate environment affect the learning process? How do the temporal structures of distance learning differ from the temporal structures of classroom learning, and do the differences matter? Unless we understand the context of distance learning, we are unlikely to understand how the technologies can be optimally used.
- *How do employers assess competency with distance-based education?* Historically, schools have provided credentials and certifications. Students who pass through a curriculum are exposed to specific content (sometimes in a specified sequence), and their performance is assessed via grades and attested to with diplomas. Schools and departments within schools are examined by external

accrediting agencies that certify quality. Furthermore, schools vary in their reputation for faculty and students, thereby providing additional information that allows employers to assess the adequacy of a student's preparation. No such institutions currently exist to attest to the quality of instruction or learning via distance education programs. In the absence of schools, credentials, and accrediting bodies, how will employers and other organizations assess the value of their employees' education and determine whether they have mastered the skills and knowledge they purport to have learned? How will employers compare knowledge, skills and degrees acquired via the Web with the same training acquired in more traditional educational settings?

- *How will students assess the relative utility of different training opportunities?* Credentials, accreditation, and reputations also provide students with a means of distinguishing between different providers of education. In the absence of such signaling devices, students may have difficulty assessing the relative utility and quality of alternative educational experiences before spending their money. To the degree that firms rely on distance courses developed and supplied by vendors, they are likely to suffer similar confusion.
- *What are the implications of the blurring of institutional boundaries?* Although firms have always offered training, most has been "hands-on," or else focused on managerial skills such as leadership and team building. Schools have historically served as the provider of general education and structured forms of training. As firms move into the business of education and offer types of courses more traditionally found in schools, the boundaries between the two kinds of institutions may blur. What can we expect if firms and schools, in essence, begin to compete for students?

Note

1. In general, distance learning refers to the delivery of a curriculum to students who are not present on campus, while distributed learning is most often used to connote ways of facilitating interaction among those distant students. For the sake of simplicity, I shall use only the term "distance learning" because it is the broader of the two terms: distributed learning can be understood as a type of distance learning.

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[\[Introduction\]](#)    [\[Are Employers' Recruitment Strategies Changing: Competence Over Credentials?\]](#)

ED423922 98 Policy Development for Distance Education. ERIC Digest.

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Distance education has the potential to offer new learning opportunities unrestricted by time, distance, or individual differences among students. However, existing educational practices cannot accommodate distance education without corresponding shifts in the fundamental views of teaching and learning as well as in state, federal, and institutional policies (Dillon & Cintron, 1997). This Digest presents a discussion of key policy issues confronting higher education in the age of distance learning and discusses the implications for the community college.

POLICY ISSUES

As with any pedagogical change, successful implementation of technology is dependent upon faculty acceptance and participation. However, little research has been done to understand faculty members' adaptation to technology and the changes in the psychological and physical environments brought about through distance learning. Therefore it is crucial for institutional policy makers to develop a thorough understanding of faculty experiences in the distance learning environment before implementing new procedures (Parisot, 1997).

According to a study by Parisot (1997), ease of use is a primary factor in the adoption of technological innovation by faculty. Technology must also be consistent with existing values, and there needs to be a real educational value beyond the use of technology for its own sake. The study also found that faculty tend to be teacher-centered rather than student-centered and tend to view technology as an aid for current teaching strategies rather than as a vehicle for developing new approaches. To address potential faculty resistance, Parisot (1997) developed a conceptual framework for consensus building. Its steps include acknowledgement of the need for change, awareness of the potential impact of technology, acculturation to new ways of teaching and learning, and affirmation by faculty to adopt the innovation.

In addition to building faculty support, Lape and Hart (1997) contend it is crucial to determine what campus leaders know about distance education, the importance they place on distance education methods, and whether or not differences in opinion exist among the various leadership groups. They also suggest that distance education will more likely be adopted if it is perceived to be compatible with the college's mission and effective from both an academic and cost perspective.

A potential barrier to the adoption of distance education is the lack of data supporting its need (Lape & Hart, 1997). The acceptance of technological solutions, especially a costly innovation such as distance education, justified by perceived rather than real needs may result in an inefficient use of resources and a negative climate for innovation. Such conditions make the future of distance education somewhat precarious.

POLICY DEVELOPMENT

Until recently, most states had few policies addressing distance education. This situation is predicted to change in the near future as states enter a period of highly active policymaking, and compelling reasons exist for community colleges to be leading players in the process (Kovel-Jarboe, 1997).

One critical policy issue at the state level is the development of a seamless educational system in which students can learn through multiple organizational frameworks (Spears & Tatroe, 1997). This means providing educational opportunities at home, in schools, or in the workplace through a system that integrates training, credit offerings, and mandatory education. Partnerships between K-12 schools and community colleges are an important starting place in the exploration of the technological, political, and

organizational factors needed to support a seamless education system. One such partnership exists between Pikes Peak Community College (PPCC) and schools in east-central Colorado. The institutions share delivery options such as interactive television, telecourses, Internet, print-based independent study, audio-graphics, and on-site delivery courses. Relationships of this type demonstrate the need for formulating new operational guidelines. In this case, the Western Interstate Commission for Higher Education's guidelines dictate minimum quality standards at the regional level; at the state level, the Colorado Post-Secondary Options Act and the State Reimbursement Procedures for Student Enrollment policy provide financial incentives for this partnership (Spears & Tatroe, 1997).

Sorenson (1997) writes that the advent of new technologies, learning partnerships, and subsequent policies raises questions about the need for evaluation. She also cautions that meeting the needs of the local institutions, state and sometimes federal agencies may lead to complex evaluation plans, which can ultimately affect the activities of the institutions involved.

For example, Iowa's community colleges participated in the development and evaluation of the state's distance education system (Sorenson, 1997). Among the challenges they faced in the process was the need to have all educational entities in the system agree on the importance of evaluation and the indicators of success. A second challenge was to ensure consistent data collection across the state without requiring unreasonable demands on personnel at local institutions. A third challenge was presented with the establishment of national evaluation indicators for schools receiving federal funds to promote the use of telecommunications. The evaluation plan ultimately developed by Iowa's community colleges was consistent with the national indicators, and also incorporated state goals.

IMPLICATIONS FOR COMMUNITY COLLEGES

Distance learning and the use of telecommunications to deliver instruction has been the subject of on-going research and legislation, often with the goal of using these tools to solve access and resource challenges. One positive outcome of this inquiry, as seen in states such as Florida, is the practical application of technology to state-wide issues such as decreasing students' time-to-degree (Dallet & Oppen, 1997).

On the other hand, the advent of new communication technologies has heightened concern over the issues of copyright and intellectual property rights (McIsaac & Rowe, 1997). The explosive use of the Internet further exacerbates these problems. Therefore, McIsaac and Rowe (1997) encourage the development of policies that address copyright, fair use, duplication, and revenue generation for both print and non-print educational materials. Some key elements to address in institutional policies of this nature include: 1) efforts to educate and increase awareness about copyright and intellectual property issues and institutional policies; 2) ways to gain licenses and copyrights; 3) resources to find licensed, originally produced materials; 4) criteria for establishing ownership of materials produced by faculty, students, and the institution; and 5) consequences for violation of institutional policies.

The establishment of virtual universities this decade presents another set of issues for community colleges. Johnstone and Tilson (1997) indicate that the Western Governors University, like other virtual university frameworks, must make some critical decisions about teaching and learning to ensure quality. Another challenge to community college administrators is the development of a paraprofessional staff to serve students, many of whom may be engaged in study at multiple institutions (Johnstone & Tilson, 1997). Financial aid policies also need to be reformulated to meet the needs of distant students.

Johnstone and Tilson (1997) also write of two major roles that community colleges can assume in order to play an integral role in the expanding influence of virtual universities. First, community colleges can function as sending institutions by providing instruction to students electronically. The second area of consideration involves the college's position as a student access and service center within a virtual university. A community college thus becomes a one-stop educational shopping center for its local constituency. Johnstone and Tilson (1997) point out that the partnership of local community colleges with the regional virtual university will serve an essential purpose in a new higher education environment by refocusing many traditional systems and mechanisms.

CONCLUSION

In the future, colleges will no longer choose between audio or video systems, between interactive or independent systems, or between one-way or two-way systems (Dillon & Cintron, 1997). A single wire will provide everything by connecting the classroom, the library, the workplace, and the home. The challenge will be to choose the most practical combination of learning experiences based on a trade-off between the costs and capabilities of a vast array of media options. In this environment, the focus of educational organizations will shift from teaching to learning. Adapting to this shift will require educational organizations to adopt new approaches for defining faculty work and securing funds for new technology. Despite the changes and lingering uncertainties, distance education is key to dissolving learning boundaries.

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*Reauthorization of the Higher Education Act***Distance Learning and the Higher Education Act:****Making College Easier and More Affordable to Attend**

In its proposal for reauthorization of the Higher Education Act (HEA), the Administration is seeking to broaden opportunities for distance learners by expanding eligibility for student aid and encouraging innovative uses of technology by institutions and other education providers, while ensuring the integrity of these courses and programs. These proposals reflect changing demographics in postsecondary education and new ways institutions are delivering higher education, while ensuring that students get what they pay for and taxpayer dollars are well spent.

According to a recent study by the National Center for Education Statistics, in 1995, 33% of all higher education institutions offered distance education to more than 700,000 students, and the interest in providing technology-based education continues to grow rapidly. Institutions are examining new ways to reach out to students, including working parents, workers that seek additional training to advance, and students with disabilities. Distance learning provides opportunities to individuals who face such time and place constraints. The Administration will also pursue different ways -- including working closely with accrediting agencies and State licensing agencies -- to learn more about distance education and to gain experience in effectively managing and monitoring the student aid programs in a technology-based learning environment.

Student Aid (Title IV) Proposal

The Administration's reauthorization proposal for distance education broadens opportunities for distance learners by expanding institutional and student aid eligibility, eliminating the different treatments in cost of attendance between distance learners and on-campus learners, while ensuring quality through accreditation. Specifically, the Administration is proposing to:

1. Expand Title IV student aid eligibility for students in distance learning by removing the 50 percent limitation and restriction at degree-granting institutions. Currently, institutions that offer more than 50 percent of their courses by distance or have more than 50 percent of their students as distance learners are ineligible to participate in the Title IV student aid programs. Under the Administration's proposal, only non-degree granting institutions (i.e. institutions that do not offer at least one degree program) would remain subject to the current requirements regarding eligibility. Expanding, at this time, institutional eligibility at degree-granting institutions only is a cautious approach that provides greater assurance that the distance programs will be high quality and serve students well.
2. Eliminate the differences in cost of attendance treatments between distance learners and on-campus learners. Currently, dependent and independent students living off-campus who are enrolled at least half-time in an eligible program receive an annual living allowance for room and board costs of no less than \$1500 and \$2500, respectively. The Administration's proposal would allow distance learners (who are enrolled at least half time) to include a living allowance in their need determination, just as the law already allows for students who live at home. This approach is appropriate in light of the societal benefits that result from an educated population regardless of whether the student attends a residential-based institution or completes a program from a distance. In addition, the Administration is proposing to allow the cost of equipment, including computers, to be included in a distance learner's cost of attendance. Currently, students receiving all or part of their instruction through distance are unable to include the cost of equipment in their cost of attendance.

As noted above, a student must be enrolled at least half-time in order to include the living allowance in the need determination. The Administration is not proposing any change to this

requirement. In other words, a student enrolled in only one course would not be provided a living allowance regardless of whether the student took the course by distance or on-campus.

For example, Mary has income of \$5,000, lives at home and takes classes full-time at the local community college. Alice also lives at home, has the same income, is enrolled in the same program, but takes all of her classes over the Internet. Both Mary and Alice are dependent students and there is no contribution from their parents' income or assets in the determination of need. Tuition and other education expenses for both students is \$1,500. For the 1998-99 award year,, Mary would be eligible for a \$2,750 Pell Grant while Alice would only be eligible for a \$1,300 Pell Grant. The difference reflects the fact that Mary is allowed a \$1,500 cost of living allowance in her aid calculation while Alice -- because she is a distance learner -- is not. Under the Department's proposal, Alice would be eligible for a \$2,750 Pell Grant, the same amount as Mary.

3. Ensure accountability of distance learning courses and programs through accreditation by requiring accrediting agencies to have specific distance learning standards that, at a minimum, address issues related to the institution's criteria for (1) selecting students to participate in distance learning, (2) monitoring student progress, (3) the academic and student support services available to students, and (4) measuring student outcomes. Currently, accrediting agencies are required to assess the quality of an institution by examining, among other things, the institution's curricula, faculty, facilities, student support services, default rates, and success with respect to student achievement in relation to its mission, including as appropriate, job placement rates, completion rates, and professional licensing exam pass rates. The Administration's reauthorization proposal would further require accrediting agencies to have specific standards on distance learning programs or courses at an institution.
4. Provide the Secretary with the authority to respond where appropriate to distance learning after more knowledge and experience is gained in this area. For example, the current provisions for academic year and program length may not apply in the distance learning arena; the proposal would allow the Secretary to respond accordingly where other alternative measures may be more appropriate. The Secretary could exercise this authority and remove regulations that do not make sense for distance learning models and change or replace them with ones that are more tailored and address the unique characteristics of distance learning.
5. Authorize an independent study to examine the effectiveness of accrediting agencies and associations in developing and enforcing the distance learning standards described in the proposed new section 111(a)(5) of the Act. This would provide the Secretary and the Congress with more information about this developing area of technology and its impact on the HEA programs, and thereby help to ensure accountability in the field of distance learning.

Learning Anytime Anywhere Partnerships

In addition, the Administration is proposing a new \$30 million competitive grant program that would support pilot projects using distance learning technologies and other innovations to enhance the delivery of postsecondary education and lifelong learning opportunities to students of all ages. The Learning Anytime Anywhere Partnership Program would encourage partnerships between educational institutions (including four-year institutions, community colleges, technical institutes, adult literacy and education programs, and regional vocational/technical schools that serve adults), community-based organizations, software and technology developers, learning assessment specialists, and private industry employers in an effort to deliver a valuable and quality education to a variety of different kinds of students who face time and place constraints. Projects in this initiative will emphasize the development of innovative ways to ensure quality and measure student achievement that are appropriate to distance education.

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Clinton Extends GOP Invite To Talk Of Medicare, Taxes

WHITE HOUSE

WITH A CONTENTIOUS legislative end game apparently at hand, President Clinton Thursday all but invited the GOP leadership to travel down Pennsylvania Ave. for a chat, telling reporters twice at an impromptu White House news conference that he was willing to talk directly with Republicans.

But although he expressed a strong willingness to compromise on a Medicare reform package, he expressed disdain for Republican tactics on taxes, brushing aside GOP threats to bury the tax issue for the year should he veto their tax cut proposal.

"If they're saying, well, it's our way or no way, then that is evidence that this has been pretty much about politics all along," Clinton said.

Clinton declined to sweeten the pot for Republicans, who have passed their \$792 billion tax cut bill. When asked whether he would go beyond the \$300 billion he is said to be ready to accept, Clinton rather emphasized that his proposal called for \$250 billion in relief.

The president repeated his oft-stated veto threat. But he did not close the door on a deal, arguing instead for "a modest tax cut that will not undermine our ability to pay down the debt."

There is "always some flexibility in this budget — we can have an agreement," Clinton said. "The question is, are we going to meet and work together? My door is open, and I hope we will."

Meanwhile, Clinton defined several areas of his Medicare proposal that could be subject to compromise — such as setting parameters for his prescription drug benefit.

"I don't want the drug benefit to be so small as to be meaningless or so expensive as to be unaffordable," he said.

And he pointed to competitive and structural reforms included in his Medicare proposal as areas where he and the GOP can "come closer on Medicare," arguing that his ideas resembled reforms embraced by the failed Bipartisan Commission on the Future of Medicare, which many Republicans backed.

But Clinton appeared lukewarm toward one of the commission's key innovations — making the managed care and fee-for-service options compete for patients.

"I don't want to force people into managed care by some pricing gimmick," he said. And he drew the line at means testing the drug benefit, saying he did not want to "undermine the universal character of the program."

In addition, Clinton appeared guardedly optimistic that steps the United States has taken in the wake of the ac-

cidental bombing of the Chinese Embassy in Belgrade, as well as "the passage of time," will allow the United States to resume "constructive conversations" with the Chinese over World Trade Organization membership.

But he declined to predict whether he and Chinese President Jiang Zemin will initial a WTO agreement during the coming Asia-Pacific Economic Cooperation forum in New Zealand, expressing only "hope" that talks will resume and a deal concluded.

— BY KEITH KOFFLER

Telecom 'Summit' Sparks Debate

TELECOMMUNICATIONS

A Democratic-sponsored "summit" on rural telecommunications held Thursday in the Capitol attracted three FCC commissioners, including Chairman William Kennard, and several Democratic senators, including **Minority Leader Daschle** — but there were no specific pledges by officials to alter the 1996 Telecommunications Act, despite calls by several industry CEOs for changes to the Universal Service fund.

Meanwhile, some Republicans grumbled that the Democrats were trying to politicize the issue through their meeting with business leaders, *National Journal's Technology Daily* reported.

Republicans and Democrats from rural states have worked closely together on the 1996 act, forming the so-called "farm team."

Because of that past cooperative effort, some Republicans were surprised about not being included in planning the CEO summit. One Republican staffer said, "It's alienating natural allies."

A Daschle spokeswoman said Democrats launched the effort in May, but reached out to "generally interested staff" in both parties. She added that everyone in the Senate was invited to participate in Thursday's event.

"All senators were invited in the same manner," she said.

At the session, Daschle said only that the government and private in-

dustry must continue to act as partners in an ongoing effort to bring affordable, high speed Internet and other telecommunications services to rural America.

Sen. Byron Dorgan, D-N.D., an outspoken advocate of improved telecommunications access in rural areas and a critic of the 1996 law, expressed hope that Thursday's forum and other such discussions "will lead us to public policy" that will result in "the build out of telecommunications services in rural areas."

Kennard took a different tack by attempting to steer industry heads away from lobbying for legislative or regulatory changes to solve rural issues.

He urged participants to "get beyond the rhetoric of blaming Congress or blaming the FCC" for lack of access to service in rural areas. Rather, government and industry should focus on solutions, he said.

Noting the presence of three FCC commissioners at the summit, Kennard also asked industry participants to refrain from commenting on the merits of rules affecting unbundling and wireless spectrum caps, which are currently being considered by the agency.

Several CEOs pointedly ignored Kennard's request and a few offered mild rebukes, claiming it is impossible to discuss the challenges of providing Internet and other telecommunications services in rural areas without addressing the

continued on page 8

Telco

Continued from page 1

shortcomings of the Universal Service fund — which subsidizes service in rural and other high cost areas.

Sol Trujillo, CEO of US West, complained that the size of the fund and how it is distributed are not conducive to investing in rural areas where the cost of service on a per customer basis is so high.

"This is not about rhetoric, this is about investment," he added.

John Stanton, CEO of Western Wire-

less, was even more critical, calling the Universal Service system a "monopoly for the wired carriers" and said it "perpetuates a lack of innovation."

However, Michael Armstrong, CEO of AT&T, spoke favorably of the 1996 telecommunications law and was one of the few to suggest it is working as intended.

Armstrong said the statute is just now having an effect on the market — making the provision of services such as high speed Internet access more competitive.

Through investment, technological

innovation, competition and partnerships, access to a variety of telecommunications services is increasing, he insisted — and indicated that AT&T is not interested in changes to the existing law or the regulations affecting broadband services.

Millions of consumers in rural America expect advanced communications services, he said, adding, "We will [provide that] as long as we can and as long as the Telecommunications Act is in place."

— BY MARY LEHMAN, WITH
REBECCA S. WEINER CONTRIBUTING

White House Remains Skeptical Of Export Act Renewal

TECHNOLOGY

THE CLINTON administration still has concerns with draft legislation that would reauthorize the Export Administration Act, according to a top Commerce official — despite his praise for Senate Banking Committee leaders for making several changes to the measure.

Commerce Department Undersecretary for Export Administration William Reinsch said the measure has been improved since the first draft bill was released by the committee in June, *National Journal's Technology Daily* reported.

But he still gave it only a 20 percent chance of passing this Congress. The committee released a revised draft in early August and may mark up the bill before the end of the month.

"I felt the odds were against it," Reinsch said. With the new draft, "the chances are better because the committee is acting in good faith. [But] I'm skeptical because the way these things lose is not because of the committee" but because of outside forces.

Still, Reinsch said the administration, which has been pushing Congress for several years to reauthorize the act, is working with the committee to improve the bill.

The act, which governs the nation's export control process over sensitive products, expired in 1994.

One area of particular concern relates to a provision that would require all the agencies involved in reviewing

an export license to reach total consensus at each level of review before a license to export was granted.

The administration and industry officials say this provision could cause significant delays.

The Banking Committee's latest draft still includes this provision.

But both Reinsch and **Sen. Michael Enzi**, R-Wyo., who is leading the committee's efforts to reauthorize the act, said the two sides are trying to work out a compromise on the issue.

Reinsch said another area of concern is over a provision requiring the administration to notify Congress of export law violations or of investigations.

"It has all kinds of unsatisfactory implications," he said, such as in-

creasing the possibility of information about an investigation being leaked to the media.

Industry officials, meanwhile, also have continuing concerns with the latest draft.

They would like to see the consensus language changed. In addition, they have problems with a provision that would require a U.S. company to obtain a license if it discloses information about a controlled technology to a foreigner working for the company.

Despite such concerns, Enzi said he remains optimistic that the committee can craft a bill that will pass Congress. "I'm pleased with the way it's coming along," he said.

— BY JULIANA GRUENWALD

GOP Free-For-All Looms In Mo. Race

HOUSE RACES

ST. LOUIS — The House seat being vacated by **Rep. James Talent**, R-Mo., who is running for governor next year, is becoming one of the most difficult-to-handicap House campaigns of 2000, political observers here agree.

The district — largely made up of affluent St. Louis suburbs — has voted solidly Republican in recent years. As a result, a half-dozen Republicans are lining up to replace Talent, and a GOP strategist said he expects at least one more previously unannounced GOP candidate to enter the race by this fall.

"It could come down to more than money," the strategist said. "It will come down to who mobilizes the grass roots."

On the GOP side, the best-known candidates are former St. Louis County Executive Gene McNary, state Sens. Franc Flotron and Steve Ehlmann, state Rep. Todd Akin and Talent's district director, Barbara Cooper.

One GOP official said McNary comes to the race with a big advantage — being known throughout the widest area of the district, thanks to his 15-year tenure as county executive.

"He was just a *continued on page 9*

The on-line revolution is not the end of civilization as we know it. But almost.

W BOSTON WITH HIS SILVER HAIR, V-NECK SWEATER OVER a crisp Oxford shirt, genteel European accent and

background as a conductor with orchestras from Boston, David Sonnenschein is no one's idea of a technogeek, ' But after 25 years of teaching music at Northeastern University, Dr. Sonnenschein finds himself happily in the thick of things on the digital frontier. Students who sign up for his MuSic 1101 -"Music: A Listening Experience" -agree to study Mozart's minuets and Beethoven's symphonies entirely via computer. Dr. Sonnenschein describes his course as a .. standalone, self-paced, computer-mediated, Interactive

Michud Quan fur The New York Times

Education.com

By Peter Applebome

zan through computer programs and the Internet to students who could just as well show up In class is not the stereotype of on-line education. But at a pace far exceeding what most people expected, on-line education is becoming a defiantly mainstream academiC experience. It is setting in motion an academic gold rush that is making universities think more like Amazon.com than Harvard.edu. It is exciting professors like Dr. Sonnenschein, who see it as an innovative teaching tOOl, and scaring the mortarboards off many others, who see the excesses of the marketplace Invading the sanctuary of the academy. It is helping to create a new academic environment in which entities with names like Anheuser-Busch University, Jones International University and Western Governors University are jockeying along with Stanford, Oberlin and the University of California at Los Angeles for a share of the education market.

While some institutions want only to supplement oncampus offerings, the goal for many others is true distance learning ona scale unlike anything before, attracting students around the globe who will never set foot in a classroom -If there is a bricks-and-mortar campus at all. That potential is attracting both traditional institutions and a wave of new ones, hoping to devise an entirely different educational model.

Despite some flamboyant predictions, almost no one expects virtual education to replace the world of ivy-edged campuses. Courses like Professor Sonnenschein's are certain to proliferate for a generation of students who are more comfortable with the Internet than the library. But traditional undergraduate education, where the SOcial experience is as much a part of the allure as the educational one, will probably be the least affected. most experts say. . Still, growth in education is not reSidential campuses for 18-to 22-year-olds. Only about 15 percent of college students fall into that age group and live on campus; 45 percent are older, nonresidential students, most of whom work. Instead, the growth is in M.B.A. programs for middle managers who cannot take two years off from their job and family; undergraduate degrees for working mothers; courses for engineers and computer technicians whose knowledge becomes outmoded every year, or ,French Impressionism or religion for boomers who wished they had paid better attention when they were undergraduates in 1970.

No one really knows who the most successful players will be. And there is a raging debate about whether the rise of on-line education is a welcome development. But almost everyone in education is casting glances -nervous or covetous -at the on-line world.

"There is great angst out there," said Andy DiPaolo, a senior associate dean at Stanford University's School of Engineering, whose distance program is a conspicuoUS early success. "People are not sure what this means. Universities are saying, 'I think we need to be in this, but I don't know.' There's been a tradition through the industrial age of students coming to the campus. and now we're told that in the communications age, the campus will come to the students. That's a big challenge to universities who typically don't think along those lines, but more and more, everyone is having to think about it."

TEACHING OUTSIDE THE CLASSROOM DID

not start with the Internet, of course. . "We started distance education in 1892 before there was' the Internet, there was the telegraph," said Jim Ryan, a vice president for outreach and cooperative extension at Penn State. "And it's evolved with the technology. First, there was ruralfree-delivery mail, then radio, then television, then a combination of videotapes and audiotapes, then 011 Studying *minuets* via computer requires a whole *new way of listening*, says David Sonnenschein, who teaches an on-line music *courSe* at Northeastern.

multimedia program" designed to introduce nonmusicians to classical music. Students listen to recorded music, read text, follow programmed "listening experiences," take tests and communicate with him by computer. When they study rondos or sonatas, for example, they listen to the mus,ic on their computers and try to match it to the technical forms shown on the screen.

"This is not about technology, it's about learning how to listen and how to understand what you're listening to," Dr. Sonnenschein said as he waited for his Power Mac to boot up in his office overlooking Cent.ennial Circle on Northeastern's campus. "I can lecture on musical forms, but to many of them I might as well be speaking Chinese. But when they learn at their own pace, they can listen over and over again until the aha! happens -until they 'get it on their own. I took the technology up late, but I'm happy I did. U's a very effective way to teach this course."

A 70-year-old conductor and composer teaching Mo-

Peter App/ebome reports on the arts for The New York, Times.

26 April 4, 1999

Class Is in Session. Now What?

T'he essential challenge of distance , learning is overcoming distance. Educators are now relying on a variety of technologies, on line and off, to break down classroom walls. According to Chris Olmegren, the director of distance learning at the University of WisconSin, the buzzwords are "hybrid technology." As the Internet's technical ability (that is, bandwidth) incr.eases, she said, "we hope to use the World Wide Web as a full multimedia transmission network."

Meanwhile, professors make do with improvised combinations of hardware and software to get their messages across: **ON LINE** On-line learning*tolls into two categories synchronous, meaning students "attend" lectures or chat lIDoms at the same time, 'or asynchronous, meaning they do courseworl- all their own schedules.* E-inail: Professors anel students send messages back and forth using electronic mail. Chat: Class discussions and individual student

teacher meetings are held in "real time" chat; but keeping up a linear conversation is difficult because the dialogue doesn't appear on the screen sequentially. Message boards: Professors use moderated topic boards, like those on the Usenet news groups, to carry on extended class discussions.

'f-;!TQN LIBRARY PHOTOCOPY

line education.

But, as Dr. Ryan quickly notes, there is no way to compare the old expectations with the new ones.

Penn State calls its on-line program the World Campus and views it as an autonomous 25th campus in the university system. In six months it has grown to 600 students from 70. The numbers should reach 1,200 in June, and the university and various partners expect to spend \$10 million to \$12 million to reach an enroll-

Web sites: Using a password, students access a class site that contains elements like syllabuses, notes, related links and assignments. Streaming audio and video:

Simulcasts of a professor's lectures can be sent live or recorded in "real time" (meaning no downloading) to a student's personal computer. ment of 10,000 students in four years. By then, university officials hope the program will begin generating revenue.

"It's the Amazon.com approach," Dr. Ryan said. "You want to expand your product and position yourself for the marketplace, so you can be a very large provider of a variety of products. You look at the range of institutions that are looking into this, and it boggles the mind. And everyone seems to think

a library, or a conference room (for students). Questions are asked by telephone.

Audio conferencing: Voice-activated Conferencing is similar to speaker-phone methods corporations use. One-way video broadcasting: In one of the first technological forms of distance learning, classes are sent live or recorded via local television broadcasts, or by satellite or microwave.

Snail mail: Videos, cassettes or paper there's a four-or five-year window to really establish yourself, so there's an enormous amount of activity." In fact, what is most striking about electronic education is how broad a universe of players is trying to get in on it. So a reporter's query on the Internet asking to hear from institutions or individuals serving the on-line education market elicits responses from a remarkable array of providers of courses, software, hardware or information.

Ohio University has its M.B.A. Without Boundaries program. The AT&T Foundation is behind a \$150 million effort to promote education via the Internet. Thierry Levy, who runs a company called Quiz Studio, touts his Web-based training programs, and Bisk Publishing its courses in business administration, accounting and computing information systems, which the company offers through partnerships with various colleges and universities.

There are responses from familiar names like the University of Minnesota and from less familiar ones like on-line corporate training programs or Jones International University, the first totally on-line institution to receive accreditation from one of the six major regional accreditation organizations. Probably the most publicized Internet programs come from brand-name schools. Stanford and Duke. Stanford's engineering program offers 100 courses, taught on line to students around the world at 140 per-

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PRESERVATION

OFFLINE

Disks: CD-ROM's and other software carry class material like special exercises and textbooks. Two-way video conferencing: Video is sent over an ISDN phone line between a broadcasting station (where the professor is) and a remote location, like arrive by mail. Face to face: Students sometimes meet on campus or with tutors at special centers. Tests are, by necessity, open book or proctored.

DAVID KUSHNER

David F. Noble, a visiting history professor atHarvey Mudd College in Claremont, Calif" warns of the excess-s of the marketplace invading academe. "There's really no case (or pedagogical enhancement," he says of on-line education.

DISTIINCE LEIIRNING

D~\$pite flf!.rnboYl:'Int predictio(JJ;, aln'lo5t no one expects (m~Jine education to replace ivy-edged campus.e:s, But aLrnost everyone: j~ (ia~ting gLL1JI~e!j ~nerVOiHC; gr colleto!..!s ~!1t the new world,

cent of the schaal's normal tuition: It has drawn 3,000 students since it began in 1997. Duke charges a hefty \$85,800 for its Global Executive ;.I.B.A. Program, which has attracted executives internationally for a i9-month program that mixes sessions on campus witi intensive study on line. Tuition includes a laptop computer, printer, software, CD-ROM's and lodging and meals aUive reSidential sessions.

But a more typical story may be that of Sheila Kaplan, the president of Metropolitan State College in Denver, with 17,600 students the largest undergradu· ate college in the country and the third largest school in Colorado. Metropolitan State represents the changing educational marketplace. Students' average age is 27,80 percent work and many find taking courses at home by way of computer, in between car pooling or after work, enormously appealing. When the college began on·l inc courses in 1996, it began with 30 courses and 420 students. This year's enrollment is 2,100 stu· dents in 87 courses.

. "It's taken off way beyond our expectations," Dr.
. Kaplan said. "Ten years ago, I used to give speeches in which I said the two pans of the American econ- omy that would never change would be medical care and higher education. Obviously, medicine has changed radically, and the computer is going to change education in the same way. In a few years, the only thing you won't be able to do on line will be to drink beer at a sorority house, date the student sitting next to you and find a parking space."

That growth may not be assured. Western Governors University, the consortium of 17 states plus Guam, opened last fall after years of hype. It offers degree programs gleaned from various universities geared to establishing competency in technical and professional areas.

Officials concede enrollment has been well below expectations, saying only that "hundreds" of students have enrolled. They won't release enrollment figures until this fall, when they will presumably have a better

software and test story to tell. The slow start has led some skeptics

to wonder if an on-line glut is already setting in. technology costs
and additional To many, the real question is not whether on-line demands on

education has a future, but whether it is a positive or a malignant one.

Andrew Feenberg, a philosophy professor at San Diego State University, is qualified to see both sides. In 1981, Dr. Feenberg was part of the team that created what he says was the first on-line educational program. Designed for the School of Management and Strategic Studies at the Western Behavioral Sciences

II Sampler of Cyberschools for students.

Everyone seems to be jumping on the distance-learning bandwagon, prodded by the possibilities of the Internet.

There are thousands of courses on line, many in areas of professional training, business and technology to appeal to older working adults. Students can earn a **master's or associate degree** in two years or so, take individual **courses or, increasingly, earn a** complete bachelor's -despite the long eight years it can take for part-time students. Because of work schedules, on-line students tend to take one class at a time, logging on at their convenience, for classes that span 5 to 10 weeks. Duke University: professors' time, they say (www.duke.edu) are often more expensive than Duke's Global Executive than conventional classes -M.B.A, a 19-month program though you're saving a bundle combining on-line and on dorm rooms. classroom instruction, accepts

Following is a range of 90 students, usually with accredited institutions international management making on-line inroads. American Military University: (www.amunet.edu) Founded in 1993, this correspondence school in Virginia offers master's and bachelor's degree programs in military studies, management and history and intelligence studies to its 1,500 students. The school now offers bachelor's degrees in military subjects on line. Berean University: (www.berean.edu/vstudy) The Springfield, Mo" college has trained students to become Assemblies of God ministers Since 1948. It now has a technologically advanced on-line option, including two-way live audio conferencing and audio summaries of every lesson, for several hundred of its 14,000 students. Institute, it allowed students at their computers to discuss issues like globalization, environmentalism and urban planning.

The technology was primitive -an Apple IIe with 48K memory and 300-baud modems (multiply by 1,000 and 100 to get the current versions). Everyone figured out teaching methods and on-line protocol as they went along. But years later, Professor Feenberg is still impressed by the ability of on-line education to draw people together and interact.

"The quality of on-line discussion surpassed anything I have been able to simulate in my face-to-face classroom," he wrote recently in a paper on distance learning.

Having seen the past, he is now witnessing the future. In the California State University system, Microsoft, Hughes Aircraft, Fujitsu and M.C.J. arranged an ambitious plan to spend \$300 million on a fiber-optic network that would connect California State's 22 campuses in exchange for the right to sell a projected \$3.6 billion in high-tech projects over the next decade to students and to universities. Opposition from students and faculty members killed the proposal, but plans are being reworked for a different form of corporate partnership.

It is one of several corporate alliances washing over public education in California. And it leaves Professor Feenberg profoundly uneasy about where on-line education is heading:

"This has galloped from what seemed like a rather impractical scheme of some faculty weirdos and their hangers-on to become suddenly a big-time push between corporations and administrators to cut costs," he said. "What I'd like to see is for the faculty to recoup the initiative. Right now, the technology is being billed as doing the impossible. It's not a way to save a lot of money or replace faculty, but that's the way it's being sold. Hope is replacing serious knowledge."

Indeed, along with the institutional feeding frenzy is a significant degree of unease on the part of many professors, who think administrators see on-line education as a way to cut back on professors and new construction.

At the University of Washington, 900 faculty members Signed petitions opposing state officials' ambitious plans for a virtual university. "We feel called upon to respond before quixotic ideas harden into disastrous policies," the petition said. "Education is not reducible to the downloading of information, much less to the passive and solitary activity of staring at a screen."

At U.C.L.A., only 30 percent of faculty members

responsibilities and 10 years' experience. The entire tuition, \$85,800, is often picked up by employers. In addition to on-line work, students meet professors, business leaders and one another at two-week residencies at Duke's campus in Durham, N.C., and in Europe, Asia and South America. International School of Information Management: (www.isim.com) This Denver school has offered graduate degrees in business and information management by mail since 1987, and now offers master's of science and M.B.A.s over the internet. Students must develop a Capstone Project, which is similar to a thesis but done at work. Jones International University: (www.jonesinternational.edu)
:-- April 4, 199<)

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**PHOTOCOPY
PRESERVATION**
Administrators say .courses are just as

complied last year with a new requirement that all courses post a syllabus on the Internet. The American Association of University Professors, which represents the nation's college professors, says that

The British courses taught on the Internet require more class time Ulan regular ones and therefore
reqilire more, not fewer, instructors. Professors have also raised is

Are Coming
sues about what effect on-line courses will have on hiring, whether one-size-fits-all
software will replace reachets and whether technology will undermine the

One of *the* U.K's *top*
. universities is a distance-
All! universities are also struggling with issues of intellectual property rights -does the university or the
eamng school, and it's
professor own the courses marketed on line? Critics sayan-line education is less about teaching

about to test American waters, than about cost-cutting and transforming teaching, via mass-produced
software. into a commodity,

By Sarah Lyall
which universities can profit from the same way they profit from research patents. Software can Serve as text, study guide and
learning exerCises, providing all

t
the materials needed 'ror a course. .

MIL TON KEYNES, England
David F. Noble, a professor of history at York Uni HE CAMPUS OF BRITAIN'S LARGEST UNIVERSITY in Toronto and currently a visiting professor . versity is spread over 30 neatly

T
landscaped at Harvey Mudd College, argues that because quality acres in this effiCient, prefabricated city about
will be so hard to monitor. the growth projections are

wildly inflated. On-line education, he says, will be no
more than a very expensive fad. just like the vogue for

correspondence courses, which peaked in the 1920-s.
"There's really no case for pedagogical enhance

ment," said Dr. Noble, who has posted a series
of three, papers 'on (where else?) the Internet

(crimunication.ucsd.edu/dl). The papers, "Digital
Diploma'M;ills: The Automation of Higher Educa
tion." have become ground zero for professorial skep
ticism about a headlong rush toward the virtual uni
versity.

Dr. Noble's qualm is not about French or Japanese
executives taking DUke's M.B.A. courses, or farmers
taking agronomy courses via computer at the Univer
sity 01 Wyoming. It is about the way Internet courses
will be used on campus.

One report by the accounting firm Pricewater
houseCoopers predicts a huge shift toward electronic

courses as a trend toward lifelong learning swells en
rollment. The report suggests that software will serve

about 50 percent of the total student enrollment in
community colleges and 35 percent in four-year insti
tutions. Which raises the specter of a tiered educa

tional system -green quads, small classes and Goth
ic touches for the privileged few -and software for

Contillued 011 Page 3{}

45 minutes from London. Inside its 30-odd build
ings, work is proceeding apace. About 1,000 fac.

ulty members are doing researcll in dozens of

fields and preparing course materials for more

than 100,000 students in .Britain and abroad. In
one low-slung ,building in the center of campus,

members of a BBC production staffare putting

together television programs, videos arid-CD

ROM's for use in. the courses; in several enor

mous warehouses off to one side, the materials

arc being divided into thick packets and then

mailed to students.

What is striking about the campus,'though. is

not what is here, but what is missiJl-g.The'l'e are.

no dormitories, no'sports fields for students and

no classrooms. In fact -and this becomes clear

after just a few minutes, when you start to real

ize that the pathS and the well-manicured lawns

are largely empty of foot traffic and the air de
void of undergraduate hubbub there .are no

students here at all. But that is just the point.
This is the campus of the Open University,

which since 1971 has provided off-site education

to more than two million students who, for rea
sons of financial necessity, class expectations or

Sarah L.vall reports *for* The *New York* Times

from London.

This newly accredited Institution, and technical subjects, from turf science, as well as a doctor, of which exists only Oli line and grass to hotel management. Twopharmacy, . draws faculty from
colleges year associate-degree programs University 01 Phoenix: across the country, offers a are being introduced in late spring. (www.uophx.edu) With amster's in business with master's and
bachelor's over "campuses" in rented buildings in communication and credits the next few years. 13 states and Puerto Rico, the toward a B.A. degree. Stanford University: school provides
no-nonsense Oxford University: (scpd.stanford.edu) Stanford education to 56,000 students, 8,500 (www.conted.ox.ac.uk) In began Internet courses for of them on line. 'On-line offerings January,
the university began a .working professionals in' 1995. Now include B.A.'s and M.A.'s in two-year certificate program in students can take on-line subjects like business, nursing and,
computer science as part of its graduate-level courses in all education. Students must be at new Technology Assisted Lifelong engineering specialties least 23 years old and employed tti" Learning
Department. Sixty

and earn a master's attend. students. chosen from about

solely online in Western Governors University: 300 applicants, are enrolled.

electrical engineering, (www.wgu.edu), Sponsored by 17 They are l'equi red to report to

which takes three to states and Guam, the school campus in England one week each ~!!!~four years for most opened its virtual doors in
year to meet instructors and take ~ part-time studems. September. It offers [our final exams. A second course on University,of Illinois: associate degrees in technical researching local history. one
of (v.'WW.online.uillinois.edu) When fields and one in the arts. The Oxford's most popular programs. UI-Onlille. one of the fastest school works on a "competencybegins later this spring. growing
programs, started in 1997-based" system; courses are not for Pennsylvania State University: 98. it had 68 courses and 1,200 credit, and students take (www.worldcampus.psu.edu) students, By the
end of this year, proficiency tests to determine if a Penn State waS one of the first UI-Online expects to have 160 degree will be awarded. Some 300 universities to offer distance courses and 4.500
students. The courses are offered by 31 learning education, delivering agricultural school offers five master's degree institutions. The university is education materials to isolated programs and is

developing other awaiting accreditation, but most farmers. Just a year old) its on-line master's and certificate programs courses come from accredited World Campus has nondegree in subjects that include library schools. programs in mostly vocational science, education and computer . DAVID KOEPPPEL

Jonathan Pnyer tcrTh(New Yo1(Times
The Open campus, outside London, has 110
dorms. nu classrooms *and, in [acL. 110 students.*

lack of opportunity, have been left outside the traditional university system. The university has done it through an acclaimed program of 'courses combining television, videotape. printed material and, increasingly, the Internet, as well as a strict system of supervision in which students meet monthly with tutors at one of more than 300 study centers around the country.

Over the years, the Open 'UniverSity has built up a presence internationally, accepting students from the European Continent and sponsoring or serving as consultant to programs in Asia and Africa. Most recently, it has helped the state university systems of California and Florida design distance-learning courses based on its singular model.

And beginning this month, it is sticking its own formidable toe in the American market by admitting the first students to the newly formed Open University of the United States (www.open.edu or www.open.ac.uk), which is awaiting accreditation. The earliest students are to COme from corporations that want employees to get on-the-job training. In the fall, the universi ty plans to admit general-interest students in business, computer studies and liberal aris.

The .school will find itself competing with a number of American distance-learning programs already in place. It will also find itself fighting a cultural bias that sees such institutions as places where "you pay a fee, they scnd you course luaterials, you send in an exam and they mail you your diploma," in the words of Gary Spink, the university's chief spokesman.

In Britain, where a Government assessment recently ranked the Open University 11th of 98 higher-education institutions in quality of teaching, it has already overcome that prejudice. Its eclectic and far-flung alumni include Craig Brown, the manager of Scotland's soccer team; Milos Kuzvart, the environmental minister for the Czech Republic; Menu Zedawi, the President of Ethiopia, and Mickey Dolenz, the former Monkee.

The' average age of an Open University student is '37. but there aren't any a'verage Open University students. To put it anolher way, an average student is' one who enrolled

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school building like Rome on its ruins. The old school was phased out in the mid-90's in favor of fOllr themed mini-schools. the educational innovation of the moment. That moment turned out to be very brief: two of the mini-schools -the Banking and Finance School and an academy based on the progressive theories of Ted Sizer

.-did not eVell at! rad enough students to open. The Cilarter School of Wilmington absorbed the Math and Science mini-school and opened on the third floor of the building in 1996.

The new school has been an instant success: its popuIn lion has already grown to 552 from 253, and next year ...it will begin creeping down into the space vacllted by the former high schoolL

What is true in Wilmington is true generally: the charter school movement is sweeping everything before it. .,0 There were. at last count, 1,208 charter schools across . the country, with 200 more scheduled for September. Even the most intransigent state legislatures are failing: in December, after several years of stout resistance

A *charter* school is a blank *slate* on which *anything can be drawn and* tested. The *Charter School of Wilmington* was *Imagined by Six* major employers in Delaware.

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clpnl, Ronald Russo, used to run the biggest parochlal high school in the state, and he brought a number of teachers and administrators with him.

Delaware passed its charter law in 19D5, and six of the state's major employers, including Du Pont and Bell Atlantic, joined forces to sponsor a school with high standards. Tllose two companies kicked in SIOO,OOO apiece, found the site and created a board of directors, who hired Mr. RUSSO: None of this is atypical; charter schools often form links with local employers, and almost always supplement their budget with outside money. Delaware law allows charter schools to dispense with the teachers' union, which the school did. This has freed Mr. Russo and his colleagues to hire teachers they considered appropriate -and, when necessary, fire them. Since ll third of the teachers could be uncertified, as long as they were working toward certification, the school bired a chiropractor with ll bl1ckground in biology to teach biology, anatomy and physiology. And Mr. Russo coulu spend the \$6,600 per student he received from the state and the district as he chose.

The school's teachers and administrators say that autonomy from central control allows them to direct their energies toward their academic mission; just as Mr. Chubb and Mr. Moe would have predicted. When the teachers learned they had to change the science curriculum to satisfy new state graduation reqUirements, they created a new ninth-grade science course during a' three-hour meeting.

"We are the paragon of school-based management," says Charles Biehl, the school's dean of math and science. "We control our own destiny."

SINCE FEW CHARTER SCHOOLS ARE MORE than three years old, it's not yet possible to say whether charter stlltus has any effect on academic performance. But charter proponents argue that the anecdotal evidence so far is positive. Ms. Allen, of the Center for Educational Reform, says she knows of 60 charters nationwide that have either outperformed comparable noncharter schools or produced larger gains than students had before the school converted to charter status. The Wilmington Charter School is one example, Last year, its students had the aver- age S.A.T. score of any public school in state; the before that, they registered the highest score On state's writing assessment test. Ms. Allen also

. points out that charter schools have succeeded according to nonacademic indexes of effectiveness attendance, student retention, parental Involvement, teacher satisfaction. Nevertheless, many charter schools are limping along, and 30 schools, or 2.5 percent of the total, lo'lve closed so far, according to Ms. Allen. Six failed to win a renewal, four closed voluntarily and the other 20 had their charters revoked . . Mary Gifford, the vice president of the Arizona State Board for Charter Schools, which has sponsored abOllt half 'of that state's 289 such schools, says that most of the eight schools that have been closed in Arizona suffered from poor management. But the underlying problem, she says, was that parents were not satisfied. "The charter schools lost students and had to be creative In operations," Ms. Gifford says. "In some cases, that cre- ativity has led to illegality; in other cases, it just led to a big mess." Two schools are being investigated for shoddy, and possibly fraudulent, bookkeeping. Even a passionate charter advocate like Joe Nathan, the head of the Center lor School Change at the University of Minnesota's Humphrey Institute, concedes thl1t Arizona has been too eager to get large numbers of schools up and running. In his recent book, "Political Leadership and Educational Failure," Sidney Sarason rebukes charter school euphoria by asking, "Is the creation of charter schools ... exempt from what we know about the creation of set-

Continued all Page 42

EDUCA!RON LIFE 31

PHOTOCOPY PRESERVATION

*The college-quiz circuit is a world of
feuds, legends and peculiarities,
where reputations are made and it's
far better to be too aggressive than
not to answer at all.*

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NORTHFIELD, Minn, NA CONFERENCE ROOM IN THE LIBRARY . of Carleton College, a small liberal arts school about 40 miles south of Minneapolis, 20 Or so

students were sitting around a horseshoe of desks, their shoulders hunched, buzzers clenched in their fists. They were concentrating on the man in front of them, Eric Hilleman, their coach, who was flinging carefully phrased questions at them in disciplines from chemistry to history to pop culture and waiting for, encouraging even, the quickest response. This 'was exercise, conditioning for the synapses between the brain and the buzzer finger. Practice for the Carleton quiz-bowl team, one of the best undergraduate groups in the country, isn't really athletic training, it's more like a tuneup for a human search engine. And on this night they were getting a workout: in two days, three four-person teams would travel to Iowa City, site of the regional championships for the National Academic Quiz Tournament circuit. Mr. Hilleman began: "He noted in his inaugural address that even in ancient Rome, politicians did not keep their promises. Unlike them, he did keep his promise to serve only one term -but not in the way he had in mind. For 10 points, name this President who got sick his first day on the job and died a month later." A student buzzed, "William Henry Harrison." "Yes." Mr. Hilleman said, continuing without a pause, "She is not Lara Croft, but according to a December 1998 poll she stars in 4 of the nation's 10 hottest computer games: one as a detective. another in a riding club, a third as a photo designer and a fourth as a nail designer. For 10 points, identify this blond bombshell made by Mattel." A buzz from the far corner, "Barbie."

"Yes, Caused by Borrelia burgdorferi. a bacterium often found in deer ticks -..

PHOTOCOPY PRESERVATION

Buzz, "Lyme disease,"
"Yes, In Moby-Dick: Queequeg celebrates it in his
room, while Ishmael himself hired aboard the Pe- quod.
Its 27th day
Buzz. "Ramadan,"
"Yes, that'S 15 points," Mr. Hilleman
said, awarding a bonus for an early
correct answer. "Nice buzz," a student
offered, Question, buzz, answer,
Question, buzz, answer, The

Bruce Weber is a national correspondent for The New
York Times,

Phonemes

Revival of the Fittest Well-groomed students psyched to
compete on "G.E. College Bowl" in 1958.

rhythm quickened; the room filled with arcana: Whitaker
Chambers, "Bringing Up Baby," Halogens, Bert Blyleven,
Calligraphy. Grub Street. William Cullen Bryant. "The
Barber of Seville," Red Skelton,
"Nice buzz,"

For a visitor with a reasonably good education but slack
recall muscles, the scene was somewhat belittling. But for a
visitor more than twice the age of these students, the scene
was also a reminder of the days when academic quiz
competition was Sunday-night television fare in the form of
"G.E. College Bowl," with the hosts, first Allen Ludden
and then Robert Earle, moderating contests between
well-groomed teams representing universities and colleges
nationwide,

Talk about retro! None of the Carleton students were alive
when the show, first broadcast in 1959, went off the air in
1970. They are, nonetheless, part of a resurgence of the
sport (game? activity? enterprise?) on American campuses,
with thousands of students participating in hundreds of
tournaments every year, both intramural and
intercollegiate. High schools compete as well, as do adults
who continue to crave the rush of a contest that tests wits
and reflexes.

The revival has been led by the College Bowl Company,
the very same organization that produced the television
show, which now provides, for a fee, questions and game
equipment to about 300 colleges and hundreds of high
schools. It was College Bowl that established the structure
of the game. A question, known as a tossup, is asked to both
teams simultaneously; the first player to buzz gets to
answer, and a correct answer earns the team a bonus
question.

The revival has also been fueled by the emergence of
competing organizations, like the National Tournament,
which have modified the game with different kinds of
questions, scoring and time elements to suit the varying
preferences of its ardent devotees,

Three distinct national championship tournaments are
scheduled this month, and many teams will play in more
than one. The National Tournament, with 48 teams, will be
held in Ann Arbor, Mich. April 9 and 10. The College
Bowl championship, featuring 16 teams, will be held in
Gainesville, Fla. April 16 to 18. And a third group, the
Academic Competitions Federation, has scheduled

a 27-team event in Chicago all April 23 and 24,

Like any subculture, the quiz-bowl world has its
peculiarities, legends, heroes, habits, intense debates and
internal feuds. The Carleton team, which will appear in
both the National Tournament and Academic Federation
championships, eschews all College Bowl events because,
the players say, the questions are too easy, the entry fees
too high, the tournament rules too regimented. Players
make reputations as cautious or quick on the buzzer,
anticipating a question almost before it is asked. And
though penalties are assessed for wrong answers, it is
thought that being too aggressive is better than being too
careful.

The most famous buzz was that of Robert Hentzel, now
the president of the National Tournament, who in a practice
session as a player at Iowa State University buzzed after
hearing "its pretext was, ..." with the correct answer: "The
Crimean War." And everyone acknowledges that Andrew
Yaphe (pronounced YAH-fay), a literature grad student at
the University of Chicago, is the nation's leading player,
but is he the best ever? Mr. Hilleman said that honor
belonged to Tom Waters, now a history teacher, who
played for Emory University and Armstrong

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Figure 1

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Providing Access to Challenging Coursework for Students from Rural and Inner City Districts

Summary

The 21st Century School Distance Learning Initiative is designed to ensure that students have access to challenging high school coursework regardless of the location of their school. To accomplish this ambitious goal, the initiative would include a package of proposals. First, it would increase or maintain existing support for three key technology access programs: E-Rate, the Technology Literacy Challenge Fund, and the Technology Teacher Training Program. Second, it would develop a public-private partnership with leading course software developers, which would subsidize the cost of Web-based course development in return for cut-rate prices for high poverty school districts. Third, it would offer a grant program for districts to support their efforts to provide distance learning for their students. The cost of the new components of the package would be \$20 million for course development and grants and \$150 million in increased funding for current programs.

Background and Rationale

The federal government has a historic role in supporting education for children who gain the most from it: children in high poverty schools. Lacking the necessary fiscal and community resources, high poverty schools are generally unable to provide high quality educational opportunities. In these schools—the schools that harbor the most pressing needs—that disproportionately lack qualified teachers, access to technology, and other resources that augment the most basic curriculum.

This Administration has not only continued to provide investments in disadvantaged communities through such programs as Head Start and Title I, but it has committed to shaping a federal role in education that holds all students to high standards, expects they can achieve, and holds schools accountable for results. In addition, the Administration has fought to make college affordable to all Americans so that students who work hard and prepare themselves to enter college will not face prohibitive financial barriers to higher education.

However, many high schools in poor rural and inner city school districts include another type of barrier: poor access to challenging coursework that students deserve and need to enter college. Faced with higher proportions of unlicensed and out-of-field teachers, especially in areas like math and science, little in the way of community financial and professional resources, and smaller numbers of students interested or prepared to take challenging courses, these schools are unable to provide AP courses, honors electives and other important offerings like foreign languages. Fewer than 60% of high schools offer AP courses to their students. That means 2 out of 5 high schools do not have access to coursework that research shows augments preparation for college and helps boost scores on achievement exams. And those high schools are disproportionately located in poor communities.

One way to bridge this gap is through distance learning technology. Not new to American schools, but still scarce among them, distance learning encompasses Web-based courses, compressed video, and courses televised via satellite. Distance learning technology can help provide coursework for students who attend schools unable to offer certain courses, need alternatives to traditional education, or seek more high quality offerings in areas such as English as a second language and remedial writing and reading at the high school level.

The following represent some current state-level efforts in distance learning at the high school level:

- Florida and Iowa have created Virtual High Schools, whereby students from across the state can .. access coursework in a variety of disciplines. Coursework is delivered via the World Wide Web.
- Virginia delivers AP courses via satellite. Nearly 2,090 students took courses through this means in the 1998-99 school year in the state ...
- Mississippi and North Carolina offers courses on compressed video, which is gaining acceptance as costs are coming down.
- The Massachusetts-based Concord Consortium (federally funded) offers courses nationally and trains teachers to develop and teach courses for the Web. '
- Universities around the country are partnering with states and school districts to offer college level and credit courses to high school students. The University of Nebraska has created a for-profit subsidiary to develop and offer on-line courses, .

Of the three technologies, Web-based instruction appears to have the most currency. It provides for lower equipment and transaction costs, uses a technology which is in schools at present and with which most students are familiar, and it is more immune to technological obsolescence than compressed video and television as it can adapt to new software and delivery mechanisms utilizing the Web.

A Federal Role

There are a number of issues involved in attempting to provide access to challenging and needed coursework for underserved schools and student populations. Among them are the following:

- Training teachers to use technology and course software
- Accessing the equipment needed to support Web-based courses
- The cost of connectivity
- The quality of course content and its cost

At present, the federal government is supporting initiatives that focus on the first three issues. The Teacher Training Technology Program, the Technology Literacy Challenge Fund, and E-Rate are all working to provide schools with the capacity and use computer technology and connect to the World Wide Web in an affordable way. The National Technology Innovation grants have also provided seed funding to partnerships endeavoring to offer access to educational opportunities through distance learning. The programs, however, are small and have been frozen to concentrate on supporting currently funded initiatives.

The last issue--course content and cost--remains a hurdle. The quality of current offerings on the Web is of considerable variance. Much of the reason is that the cost of course development is very high. The Southern Regional Education Board reports that states in this game have found course development to be roughly \$200,000 per course; private developers quote numbers in excess of \$700,000 per course. To add to the problem, software developers with access to the capital needed for high quality R&D efforts are generally unwilling to jump into the on-line high school course market because of the multiplicity of standards, curriculum requirements and assessments across states. Where developers are coming into the market--for example APEX in developing AP courses--they are doing so where the standards are national in scope. At the same time, their products are not cheap and generally unaffordable for the student populations that need them most.

With ongoing initiatives in training, equipment and connectivity, the key area for federal involvement and support is in the area of course development and subsidy: Through this approach, the federal government would allow states to continue their own efforts to offer coursework based on their standards and unique needs (e.g., Florida's Virtual High School), but provide quality content and take the pressure off of course development.

Initiative Design

The initiative is a package composed of three distinct pieces:

1. Propose increased funding for the Technology Teacher Training program and the Technology Literacy Challenge Fund and continuing the funding plan for the E-Rate program.
2. A public private partnership with a group of course developers. In exchange for a hefty subsidy of course development for AP courses, courses in ESL, foreign languages, and other important offerings, course/software developers would offer the courses at severe discounts (or free) to eligible high poverty schools.
3. A competitive grant program for states and districts to allow schools to apply for course access and to help defray the costs of additional expenses needed to support such an initiative (including training personnel, working out scheduling issues, working with community colleges and Community Technology Centers for access to needed facilities and equipment, etc.). The grant program could also subsidize state and school efforts to offer access to college courses.

We have had discussions with the leading AP software developer, APEX, and there is great interest in an initiative of this type and scope. They are providing us with paper on the concept. We have had initial discussions with APEX, which creates and sells web-based AP courses, about subsidizing the cost of R&D in return for cutting in half the cost of their software for poor districts. APEX is very interested in a partnership of this breadth and scope and the group is sending along some paper on a potential commitment.

Initiative Cost

The new costs associated with this initiative would be \$20 million to support the partnership with industry and a grant program for states and districts. The cost breakdown would be as follows:

- \$500,000 per course for 16 AP courses with APEX and other companies (\$8 million). APEX quotes \$750,000 per course development.
- \$300,000 per course (very rough estimate) for other 8 other courses areas such as ESL, foreign language, and remedial needs (\$2.4 million)
- \$10 million grant program to offer access to courses and seed local efforts to provide courses to students.

The initiative would also seek increased funding in the amount of \$150 million:

- Maintain E-Rate at \$2.25 billion commitment
- Increase Teacher Technology Training funds from current level of \$75 million to \$125 million.

- Increase Technology Literacy Challenge Fund appropriation from \$425 million to \$525 million (OMB plans this request) ..

Together with the new course development and access initiative, the total new costs would be \$170 million.

Possible Critiques of the Approach

Effort would fund development without guarantee that schools would take-up discount rate courses on the Web. The subsidy of industry would have to occur before districts signaled a desire to pay for courses at discount rates or target other resources to support this effort. Response: The efforts already occurring in states are testament to the demand for such services. That said, the initiative would warrant a lot of outreach to "eligible communities (concomitant perhaps with E-Rate outreach efforts). . "

Given the small size of the course development industry, partnering with companies will end up undercutting competition in the industry.

This danger does exist, but if the partnership were opened up, bid out, and committed to not doing a sole source contract, then it could actually increase competition in the industry.

Political Considerations

- Sen. Kennedy is the major supporter for the Star Schools Program (it was his creation) and the Senate in general likes the program. It will be frozen for next year and an initiative like this could attract support.
- Republicans and Democrats have supported AP fee assistance and would likely support this effort to increase access to AP courses and other challenging coursework. The College Board's government relations shop reports that Sen. Bingaman (D-NM), Rep. Cunningham (R-CA), and Sen. Hutchison (R-TX) are among the program's most ardent supporters.
- The rural support aspect of the initiative could win support among Republicans who pushed for the Rural Education Act in the House's ESEA reauthorization proposal. Although that initiative was more of a Super Ed-Flex accountability model dressed up in a rural education rescue program, the issue of supporting rural educational needs is a real one that should develop broad support. Inner city advocates should also line up.
- There is the potential for opposition from two areas: those who see this as a move towards national standards and curriculum and 2) those who see this as a move towards faceless education that might supplant home schooling and the like: Both arguments are fairly weak, but the language describing and promoting the initiative would need to be sensitive. I.e., national course curriculum and virtual school terms could stir unnecessary opposition.

Electronic Delivery of .. igh School Courses:

. *Status, Trends and Issues*

Electronic Delivery of High School Courses:

Status, Trends and Issues

An 16 Southern Regional Education Board states llavehigh school students receiving courses electronically, according to a recent: SREB survey of state departments of education.

Distance learning remains more prevalent in higher education; the survey indicated that only a small number of high school students take classes through distance learning. However, interest in increasing the use of the Web to deliver instruction is . growing tremendously.

'vWhile access to electronically delivered courses can benefit any high school student, .it is most essential for the following types of studems:

e students attending schools that are unable to provide certain acaden'lic courses:

- . students who need an alternative to traditional E'ducation;

- " students who have some access to..courses but want alternatives to courses offered in thei.r high schools;

- students with physical disabilities or students with prolonged absences from school because of illness; and

CD home-schooled students.

How can these students have access to the courses they need to s~ccceed in school arld adequately prepare for their future? Courses are delivered electronically to higtl school students in the SREB .region primarily Through three methods: satellite, compressed video and the \Neb. Television instruction delivered by satellite, which has been used longer .than the other methods, still serves the largest number of students taking electronic courses. Although the cost has declin~d, satellite delivery requires students to beat ,a specific location at a specific time and therefore has 110t rnet predictions for expansion. Satellite delivery likely will continue to be used in states where it is well-established.

Generally, states that continue to use satellite instruction tend to focus on higher-level, Advanced Placement and foreign language courses. According to the Virginia Department of Education, Virginia has more courses delivered by satellite than other states. During the 1998-99 school year, more than 1,850 Virginia students received courses via satellite. These courses included AP courses in statistics and English; Japanese 1, 2 and 3; and German 1, and 2. Test results show that students taking these satellite delivered courses passed AP exams at a significantly higher rate than the national average."

Mississippi provides calculus, physics, Japanese; Latin 1 and 2, Spanish 1 and 2, and German 1 and 2 via satellite. Legislative funding in Texas provides districts with

satellite systems to access academic courses, and school districts select the programming providers and courses they feel best meet their students' needs. In South Carolina the Instructional Television Fixed Service (ITFS) allows school districts to transmit four channels of closed-circuit programming to schools within a district from a central transmitter site. During the 1998-99 school year 601 students partic

ipated in the ITFS.

A few states use compressed video, which appears to be gaining in acceptance because the technology is becoming increasingly affordable and available. The Mississippi Educational Network provides a full range of academic courses via compressed video. During the 1998-99 school year 4,224 students participated in compressed-video courses. Virginia and Louisiana are increasing their use of compressed video as an alternative way to deliver instruction in high schools.

Some states continue to use a combination of technologies for distance learning. Louisiana uses a program that combines conference calling with computer graphics. The program, called Telelearning, served 1,609 students last year and has been used for more than 10 years.

Interest in Web Courses

Although only a small number of high school students now take Web-based courses, the Web shows great promise for instructional use and the number of students is increasing. State departments of education staff who responded to the SREB survey expressed an overwhelming interest in increasing the use of Web-based courses for high school students.

The region's largest Web course initiative for high school students is the Florida High School, a virtual high school based in Orlando. The Florida High School offered 46 courses in fall 1999, including AP Biology, AP Calculus and "Critical

Thinking and Study Skills..... SAT Preparation," with more than 1,700 students enrolled. Since it began in 1997, the initiative has received more than \$9 million from the Florida Legislature. Its goal is to offer the full program of academic courses for high school students by fall 2001.

Across the SREB region, some high school students have access to Web courses that are developed and offered through special projects or by universities or school districts. Students in several SREB states are taking courses through the Concord

Consortium, a federally funded project in Massachusetts that trains teachers to develop and offer courses. Schools in Alabama, Georgia, North Carolina, Texas and

Virginia started participating during the 1998-99 school year. The University of Texas at Austin is developing and offering Web-based courses for high school students in that state. The Unified Independent School District in Texas has received funding from the U.S. Department of Education for its Project Millennium, which will provide courses to 30 schools. The Houston Independent School District also is developing a virtual high school.

Are Web-based courses for high school students the Hmong-sought "silver bullet" that will meet students' academic needs in the SREB states? To realize the method's potential, the use of Web-based courses must be given adequate time and support. The SREB Educational Technology Cooperative has examined this problem in the last year and issued a report called *Essential Elements for Web-based Courses for High School Students*, report highlighted the urgent need to resolve critical issues related to policy, instruction, management and funding in order to provide academic courses to high school students through distance learning. Among the related topics that must be addressed are quality of courses, tuition and fee arrangements, adequate technical support for teachers and students, and student evaluation.

Web Course Issues

Some important issues surrounding the use of the Web in teaching high school students are beginning to emerge:

1. All students should have access to core and higher-level courses, such as Advanced Placement courses, which are critical for high school students. Ideally, a full range of elective courses would be available, but these courses are not immediately essential.
2. It is costly and time-consuming to develop high-quality, interactive Web-based courses. Because this is a new technology, the initial development of each course takes at least six months and the cost estimates for the necessary personnel,

equipment, software and technical support frequently exceed \$200,000 per course. Should many states or projects develop the same Web-based course? If one state develops and offers a quality algebra course, should other states create algebra courses or participate in arrangements to share? Should the focus be on implementation rather than on development? Many of the serious issues related to policy, regulation, funding and management occur in the implementation of these Web-based courses rather than in their development.

1. Fewer than 5 percent of teachers and students have had experience using Web-based courses. Most teachers do not have the skills needed to develop and offer Web-based courses. In addition, the technology to develop and offer courses changes rapidly, and new products are introduced almost daily. Finally, widespread use of Web-based courses is not available because the level of technology to offer and receive Web-based courses is insufficient and the technology is not evenly distributed within states. E-Rate discounts and other support to improve schools' telecommunications capacity are improving the availability of technology. Unfortunately, though, the students who most need these opportunities often attend the schools with the most limited resources.

2. Web-based courses will require more independent work than many students have experienced. As courses are developed, it is important to devise procedures for monitoring student work and provisions for frequent interaction with the teacher. Students who are not self-directed or self-motivated will need more interaction and follow-up.

The SREB Educational Technology Cooperative is working closely with SREB states to determine how states can share resources to provide Web-based courses for high school students. These efforts are designed to:

- coordinate and assist states in this new, rapidly evolving method of delivering instruction;

- meet students' academic needs through Web-based courses, especially courses in core academic subjects;

- minimize policy-related, instructional, financial and managerial barriers to student access to quality academic courses (for example, ensure that educational materials are adequate, identify possible fiscal arrangements between offering states and schools, and help identify courses that meet individual states' academic standards); and

- help districts and schools within a state avoid the initial costs (and time associated with developing Web-based courses by enabling them immediately to offer online courses that are already available to students.

Conclusion

Some states will continue to use satellite-delivered television instruction, compressed video and other technologies to deliver courses to high school students. Even so, Web-based courses are very promising because of the level of access by individual users and the capacity for interaction. This relatively new technology has the potential to be a very successful educational tool. While there is an initial focus on developing Web-based courses and on associated technical issues, the policy-related, instructional, financial and managerial issues ultimately will determine whether a course succeeds. As Web-based technology matures in the next several years, policy-makers and decision-makers will need to focus on several key areas:

- Policy, regulation and legal issues related to developing, offering and receiving courses delivered over the Web: There are several unresolved issues that need to be addressed. Among these are safety and security, alignment with state academic standards, ownership of courses, teacher workload, teacher contracts and quality controls. Who will be permitted to offer courses for credit: to students within each state, and who will make that determination?

- Financial issues surrounding this new method of delivering instruction: Who will pay for course development? How will ongoing operations be funded? How will schools or students be charged to take a course, and how much will they have to pay? Will there be technology or materials fees attached to tuition charges?

- Management issues at the school level: Using this new technology for instruction will require teachers and administrators to invest a considerable amount of time and attention. Among the issues that need to be addressed are the following: monitoring of student work; technical support for teachers and students using Web-based courses; selection and training of teachers to develop and offer courses; administrative issues regarding the acceptance and recording of courses for credit; dissemination of information about courses to other teachers to ensure schoolwide support; and adequate provision for additional learning resources that students taking Web-based courses will need.

SREB

for Web-Based Courses for High School Students

The World Wide Web increasingly is being used to provide academic courses for high school students. Many regional, state and local projects are developing and offering Web-based courses. Schools' growing use of this technology raises many legal, policy, logistic and technical issues.

The Southern Regional Education Board's Educational Technology Cooperative has identified essential elements for Web-based courses for high school students. The *Essential Elements* prepare schools to assess a Web-based course before they commit to developing courses. The *Essential Elements* also give students and their parents information about courses before they participate. Web-based courses will meet students' needs across the SREB region, but only if these courses are designed carefully, supported appropriately and used effectively.

The *Essential Elements* are based in part on the *Principles of Good Practice*, quality guidelines for the SREB's *Southern Regional Electronic Campus*.

The following set of basic assumptions provides a framework for consideration of essential instructional and managerial elements in the development and use of Web-based courses. The subsequent sections are designed to help policy-makers and managers think about specific policy and related issues.

Basic assumptions:

- Each course is provided by or through a school that is accredited by a nationally recognized accrediting body and is authorized to operate by the state where it originates.
- The course is developed based on the originating state's academic standards for students and meets an acceptable level of correlation between course content and academic standards in the state where it is being used.
- Prior to offering a new course, schools or state departments of education review it to ensure quality.
- Each electronically delivered course results in learning comparable in rigor and breadth to learning in a traditionally delivered course.
- Technical requirements are established to ensure that students have acceptable access to the course.

establishes minimum technology competencies for students.

> The school or state department of education delivering the course provides necessary and relevant learning resources, including research information, periodicals and other information related to course content.

> Fair, adequate methods and procedures are used to measure students' mastery of content. > Students receive timely and informative feedback about their progress; support is provided for those having difficulty, > Teachers of the course possess appropriate academic credentials to teach it. > Teachers of the course meet state eligibility requirements. > Only teachers trained to deliver Web-based courses are instructors, > Teachers are trained to use the course Web site and resources effectively to deliver instruction. > Teachers receive technical support to ensure ease of use, for faculty and students.

As stated above, the following sections identify specific policy issues that should be addressed as Web-based courses for high school students are developed and delivered.

Curriculum and instruction:

- > A complete course syllabus is available for review.
- The course contents are systematically designed and clearly written,
 - Each course is field-tested and revised based on those findings. Documentation of findings is available upon request.
- > The course engages students in learning activities based on a variety of learning styles and can be adapted to accommodate student disabilities.
- The course provides opportunities for students to engage in abstract-thinking and critical reasoning activities that are critical to the course's learning objectives.
- Issues associated with the use of copyrighted material are addressed.
 - > The school offering the course provides required and relevant learning resources needed to meet course goals.
 - Resources that extend the scope of course content are identified and available to students.
 - Interaction between the student and teacher and among students meets student goals and course goals.
 - There is a plan for monitoring chat or other student-to-student interaction.
 - > There are state and/or local policies regarding the standard workload for teachers of Web-based courses.

Managem ent:

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tation issues are addressed before a web-based course is offered. The school where the student is enrolled has accepted the course for elective credit or core credit. Grading and fees for the Web-based course are established. ED Procedures for fees and payment are established prior to student enrollment in a course. There is a plan for recourse if the Web-based course is not delivered as described.

G The contents and course objectives of a core course, which are based on the academic standards in the state offering the course, are reviewed and, if necessary, modified to conform with the academic standards of other states in which students will take the course.

- The academic calendar of the students and teacher is coordinated before the course begins.

G The teacher of a Web-based course and students taking the course receive technical assistance from the school offering the course and the school receiving it. Distribution of state full-time-equivalent funding for students enrolled in a Web-based course is determined before the course is offered. Student work is secure from access by others. ED Provisions are made for the technical and academic needs of charter-school students or home-schooled students who take a Web-based course. ED Teachers are compensated for the development of a Web-based course and materials.

Evaluation and assessment:

- The course's instructional design includes student assessment. Procedures are established for proctoring and/or monitoring students during testing.
- Each course is evaluated over time by the state agency or other entity designated to monitor courses.
- Instructors can verify student participation and performance.

Thompson Learning Group of the SREB's Educational Leadership Cooperative produced this document. For more information, please contact Bill Thomas, SREB director of educational programs, at billthomas@web.org.

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. November 2,1999, Tuesday

SECTION: Financial News

DISTRIBUTION: TO BUSINESS, TECHNOLOGY AND EDUCATION EDITORS

LENGTH: 1727 words

HEADLINE: SchoolCity.com Taps the Expertise of Educational Experts by Forming Scholastic Advisory Board; New **Virtual** Community Collaborates With Network of Educators to Meet Online Needs of Teachers, Students and Parents .

DATELINE: SANTA CLARA, Calif., Nov. 2

BODY: ,

SchoolCity.com, a ne~ Web-based community for teachers, students and parents, today announced the formation of a group of educational advisors that will guide the company to its ultimate goal of helping teachers do their jobs more effectively, thereby enhancing and improving the learning experience for students.

"I am very pleased and excited to announce this impressive group is now part of the team that will help make SchoolCity the leader in Internet-based educational enhancement," said SchoolCity CEO and co-founder Jamal Haider. "Collaborating closely with our internal staff, this new advisory board will help SchoolCity provide teachers, students and parents the online tools, content and services they need to harness the power of the Internet." .

Drawing on their real-world experience, the following board of advisors will provide School City with feedback, guidance and strategic counsel in the areas of education and technology, act as valuable contacts in their respective industries, and validate the company's current and future direction.

Nancy Borchers

Nancy Borchers is currently a Specialist of Instructional Programs for . mathematics and science in grades K -12, following 22 years of teaching mathematics to junior and senior **high school** students in Ohio. . Her responsibilities include integrating technology into new and existing curricula, and overseeing technology training for teachers and administrators. Borchers also spent two years with Ohio SchoolNet, the official state agency responsible for technology in K-12 classrooms. While there; Borchers worked to design and develop a project that focused on interactive online tools to assist teachers in developing projects linking classrooms to all stakeholders .. Another SchoolNet assignment involved moderating an on-line math/science project titled "INTEC" through the Concord Consortium. Borchers received her BS in Education from Ohio State University and MA in Education from Miami University. .

Michael Hutchison

Michael Hutchison is a social studies teacher at Lincoln **High School** in Indiana, with more than 20 years experience in the classroom. He has been nationally recognized for his work in bringing technology to the classroom, winning first place nationally in the 21 st Century Teacher contest in 1996 and 1997, as well as winning a first place prize in the Compaq Teacher Lesson Plan contest in 1998. Hutchison is also co-editor of the **Virtual** Blackboard Web site, which provides Web tours .and curricula for teachers in grades K-12. Furthermore, he is a co-moderator for "Strategies for a Successful Internet.

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Adventure" professional development workshops, which are now being offered exclusively on SchoolCity in conjunction with online tutorial provider Onlineclass.com. Hutchison also serves as a technology associate for the Indiana Department of Education. Hutchison received his MA in Education from Indiana State University. .

Alixandra Sasha Kirkman

Alixandra Sasha Kirkman is an instructor in English and social studies at Landmark **High School** in New York City. Kirkman is using SchoolCity to recruit and collaborate with several other teachers and classes to work with her own 9th graders in New York City on a special Internet-based project on the theme of democracy. At Landmark, Kirkman has taken leadership roles in portfolio assessment, cooperative learning, interdisciplinary curriculum and team planning. She has also been instrumental as the school's Video Coordinator and has acted as the Eiffel Grant Liaison for implementing multi-media and Internet applications in the classroom. Kirkman received her MA in English Education from the Teacher's College at Columbia University.

Annette Lamb

Dr. Annette Lamb is a professor of Teacher Education at the University of Southern Indiana in Evansville, where she currently works with educators to more effectively integrate technology into their classrooms. In addition to maintaining a popular educational Web site called Eduscapes; she writes, speaks, and conducts professional development workshops in the areas of educational technology integration, educational computing, and media management. Prior to working in higher education, Lamb was an elementary library media specialist and computer teacher as well as President of Vision to Action. Lamb has published numerous articles and several books on technology integration, including multimedia and the Internet. Her latest book is "Newberys and the Net: Thematic Technology Connections," which focuses on combining children's literature and Internet resources. Lamb received her Ph.D. in Educational Technology from **Iowa** State University.

Jerry Lapiroff

Jerry Lapiroff has been a teacher in California and elsewhere for more than 30 years. Presently he is a teacher of English, journalism and photography at John Kennedy **High School** in Fremont, California. Lapiroff is the Technology Projects Coordinator and Coordinator for School's **Virtual High School**, a distance learning program for **high school** students. During his 15 year tenure as advisor to the school newspaper, he and the student staff have garnered numerous awards, including the Columbia Scholastic Journalism Association medal, the National Scholastic Press Association All-American award, San Jose Mercury Newspapers in Education award, and the California Journalism Education Association Best of Show. Furthermore, his students have earned 15 journalism scholarships and several internships at major metropolitan newspapers. Prior to teaching **high school**, Lapiroff was a lecturer at Brooklyn College - City University of New York. He has also been a presenter at the Alliance for Distance Education in California, the recipient of a **Virtual High School** Enhancement Grant, and a National Endowment of the Arts Individual Grantee. He is listed in Who's Who in American Education. Lapiroff has a BA in English from Brooklyn College.

Rena M. Palloff

Dr. Rena M. Palloff has been working in academic settings for the last 20 years. She is the co-author of "Building Learning Communities in Cyberspace, Effective Strategies for the Online Classroom." Presently she is a faculty member of the Fielding Institute, teaching their online Master's

program in Organizational Design and Effectiveness. Palloff has a Bachelor's Degree in Sociology from the University of Wisconsin-Madison and a Master's Degree in Social Work from the University of Wisconsin-Milwaukee. Palloff ' also holds a Master's Degree in Organizational Development and a Ph.D. in Human and Organizational Systems from The Fielding Institute.

Keith Pratt

Dr. Keith Pratt holds several academic degrees to go along with his' successful career in education and technology. At Wayland Baptist University and the University of Alaska, he taught courses in communications, business management, organizational theories and computer technology. Pratt-recently was an Assistant Professor in the International Studies Program at Ottawa University in Ottawa, Kansas. Pratt is currently a Project Manager for Datatel. Pratt has a dual degree in Business Administration and Computer Systems Technology from Wayland Baptist University. He holds a Master of Science Degree in Human Resource Management and Organizational Development and a Ph.D. in Human and Organizational Systems from The Fielding Institute as well as an honorary Doctorate of Science in Economics from Moscow State University. .

M. Haseeb Rizvi

Dr. M. Haseeb Rizvi brings an international perspective to his leadership role in the information technology field. Haseeb has been a professor at Stanford University, Concord University in Canada, Lund University in Sweden as well as Kansas State and Ohio Universities. Presently, he is the President of Sysorex and an Executive Consultant of Techrean Division where he is responsible for the identification and assessment of evolving technologies. He has also served as a Senior Research Statistician for the U.S. National Academy of Sciences.

Joseph Zisk .

Dr. Joseph Zisk has taught chemistry in Pennsylvania public **high schools** for the past 25 years, currently teaching at Souderton **High School**. Zisk is working with SchoolCity to administer his weekly chemistry tests online, taking a dynamic role in final development of the company's new Web-based quiz . tool. He previously acted as the Science and Technology coordinator for his district. Zisk is also an adjunct professor at Beaver College and a nationally known science educator and curriculum developer serving in . leadership positions with the American Chemical Society and the National Science Teachers Association. Zisk, who received his doctorate in Science Education from Temple University, has presented papers on his work with Electronic Journals at the 1999 National Educational Computing Conference (NECC) and has served as a reviewer for the Journal of Research in Science Teaching.

About SchoolCity

Based in Santa Clara, California, SchoolCity was founded in January 1999 as an online community for teachers, students, and parents. With its unique My Classroom and School Site Builder tools and comprehensive, free one-stop services, School City provides teachers with easy-to-use, time-saving online tools and services to efficiently solve real-life school and , classroom-related 'challenges. To help ensure that families have a safe and rewarding online experience, SchoolCity also supports the GetNetwise project created by Internet industry corporations such as Microsoft, IBM, Dell and Yahoo and public interest organizations such as International Society for Technology in Education and UNESCO Kids Online. For additional information about SchoolCity, call 877-588-0710 or visit SchoolCity's Web site at

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September 29, 1999, Wednesday EXTRA EDITION

SECTION: ;NEWS; Pg. 4

LENGTH: 266 words.

HEADLINE: Playhouse Curriculum Will Go Nationwide

BYLINE: JUDY HORAN

SOURCE: WORLD-HERALD CORRESPONDENT

BODY: . .

The community theater that shared Henry Fonda and Dorothy McGuire with the world now is sharing its Theater Tech apprenticeship program with other community theaters. The Omaha Community Playhouse curriculum will be marketed throughout the United States starting in January.

- The playhouse is licensed by the Bureau of Apprenticeship and Training to set up the Theater Tech apprenticeship program in other cities. . .

Steve Bross, director of the apprenticeship program, spent the summer videotaping the lectures he gives to his students at the playhouse, working with the University of Nebraska-Lincoln College of Continuing Studies. His son, Matt, a UNL theater major and former playhouse apprentice, is his father's editor and cameraman.

Those lectures will be seen by students in **Florida**, Alabama, Hawaii, Arkansas and Michigan. "New York is coming to talk to us," Bross said. Memphis, Tenn., Ocala, Fla., Albuquerque, N.M., and Grand Rapids, Mich., are beta test sites for the **distance learning** program.

Bross will use the Internet and a speaker phone to communicate with students in other cities, where a site coordinator conducts the two-hour classes. Students receive **high school** credits through the University of Nebraska **distance learning** program and college credits through Metropolitan Community College in Omaha.

Bross learned that the U.S. Department of Labor also is interested in the Omaha apprentice program. Officials recently videotaped interviews with him on that topic. The tapes will be used by the government as a teaching tool. .

LANGUAGE: ENGLISH

LOAD-DATE: September 28, 1999

FOCUS: TM

Search: General News; virtual university or virtual high school or distance ...

To narrow this search, please enter a word or phrase:

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Copyright 1999 Lancaster Newspapers, Inc. LANCASTER NEW ERA (LANCASTER; P A.)

October 9, 1999, Saturday

SECTION: LOCAL NEWS, Pg. A-6

LENGTH: 576 words

HEADLINE: On-line education at Manheim Twp.;
Pilot courses scheduled to begin in Jan.

BODY:

Manheim Township School District is taking education on line in Janu~ry when it starts three interactive online classes for students at **Virtual High School**. .

"Weare not aware of any other districts or (intermediate units) doing what we are trying to do," said Hank Walker, director of instructional services. "Out of29 intermediate units in the state, less than a handful are trying to pursue this." . .

Walker said the Lancaster-Lebanon Intermediate Unit 13 hopes to form a consortium of participating area districts that will offer some courses on line as early as fall 2000.

Manheim Township will test the waters in January when it premieres pilot courses in Health: A Guide to Wellness; Family Consumer Management (formerly known as home economics but revamped for our . changing times); and Tour. ofDuty, a history elective spotlighting the Vietnam War.

Dr. Tom Oblender, director of Manheim Township's **Virtual High School**, said the idea was developed in response to state mandates requiring districts to offer Family Consumer Management to **high school** . students. The course, which includes child care and health as well as consumer behavior, is offered for a half credit. .

Oblender said the district wanted to offer the course but didn't want to extend the school day from seven [to eight periods or force students to forego taking any other academically significant courses because of the state requirement. "So we came up with this on line option," Oblender said. ..

To prepare for the task, Oblender said district officials visited Orange County, Fla. to view the inner

workings of the **Florida High School**, a state and county government-supported computer-mediated . on-line **high school** that began in 1997 and offers courses in such topics as chemistry, American history and math. . .

.[Manheim Township and IU-13 have spent ab'out \$250,000 in preparing for online courses. The project is staffed by three former classroom teachers: Jane Glass, Pat Mowrey and Kay Watson. They have been at work full-time since August developing Web sites and addressing the challenge to create an interactive . experience in a virtual classroom where actual students are separated by time and distance. .

Tony Aldinger, district technology coordinator, said g'etting over the hurdle ofcreating an interactive classroom may involve techniques such as requiring students to work cooperatively on a project, live. on-line discussion groups, 24-hour response time to emails or something as simple as posting individual studehtphotos on line.

"We don't want to lose that human touch. We'd like to make it our niche that we place emphasis on the

individual and make the student feel like a student, not a number or a screen name," Aldinger said ..

Walker said IU-13 is preparing to make a presentation to area superintendents to determine which have an interest in the on-line consortium and what classes may be offered in the fall.

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Currently, the Virtual High School's enrollment will be limited to high school-age students in participating districts. However, in time, it may be opened to home schooled children or adults. The technological capability is so new that many issues, such as enrollment eligibility, will have to be addressed as they arise. .

"It's very new," Walker said. "It's very challenging but there is a lot of potential there and as things move forward, it will open a lot of possibilities." .

LANGUAGE: ENGLISH

LOAD-DATE: October 14, 1999

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Example: House of Representatives

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November4, 1999, Thursday

SECTION: Financial News

DISTRIBUTION: TO BUSINESS AND TECHNOLOGY EDITORS

LENGTH: 1819 words

HEADLINE: The Best Multimedia Conferencing Products, Applications And Services are Recognized at 18th Annual TeleCon Awards " .

DATELINE: ANAHEIM, Calif., Nov. 4

BODY: , ,

Scores of companies and organizations were honored Wednesday night by the multimedia conferencing industry for having this year's products, applications and services for conferencing and collaborative communications. Winners were announced in more than 30 categories, including marketing and advertising, **distance learning**, products/services, and a "People's Choice Award" for the best video streaming application.'

, The 18th annual TeleCon Awards were held in conjunction with TeieConWest '99 the world's largest exposition and conference for all forms of video-, audio-and data-conferencing. More than 15,000 people are expected to attend the four-day international event to visit the exhibits, displays and demonstrations of more than 250 manufacturers and service providers over the 135,000 square foot exposition area.

"The award-winning technologies and applications of today will help set the industry standards for tomorrow,'" according to Keith Gallagher, publisher of Teleconference Magazine. .

Joe Flynn, International Group Show Director of Advanstar Communications; which produces TeleCon' West, noted that "these winners represent the best and the brightest that our industry has to offer. The ultimate winners, however, will be those who buy and use these products and technologies so they can be more competitive, work more effectively, and communicate more efficiently in the new millennium."

The list of TeleCon Award winners follows:

DISTANCE LEARNING

Higher Education 1st Place --University Access
--"Introduction to Macroeconomics: Mastering
the Global Economy" , 2nd Place --Clayton
College & State University --ICCSU **Distance
Learning** On-line Degrees . _LI_ ~"-----|-

1st Place --NASA Langley Research Center Office of Education --"Quieting. the
Skies" and "Recipes for the Future" 2nd place --San Diego County Office of
Education --' . , "Math Vision" 3rd Place --Mantua Elementary School, **Distance
Learning** Center --"Sixth Grade Bridge Builders Consult the Experts"

Continuing Education , 1st Place --Wharton School of the University of Pennsylvania
and the Calibur Learning Network --Wharton Direct: "Building a Business
Case" '

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2nd Place --U.S.,Food and Drug Administration --!!Medical Response to Biological Warfare and Terrorism!!

3rd Place--Hospitality Television, Jefferson Community College and Kentucky Educational Television --Kentucky School at Work Program

Corporate Training 1 st Place --LIVEware5 --Rising Star Management Series "Negotiation Skills for Managers"

2nd Place --State Farm Insurance Companies Network -Countdown . 3rd Place --U.S. Army Corps of Engineers --Land Management --Fort Leavenworth CD .

Best Program --Internet-Based 1st Place --SiNet 2nd Place --Clayton College & State University
--Georgia's First Going
the Distance College 3rd
place --Apex Online Learning
--Advanced Placement Courses for
High School Students

Best Program --Best Distance Education Network 1st Place --The Knowledge Channel 1st Place
--Massachusetts Corporation for Educational Telecommunications 2nd Place --Washington State
Department of Information Services --K-20

Educational Telecommunications Network 3rd Place --Chester County Intermediate Unit --Chester
County Distance Learning Consortium

BROADCASTING

Best Direct Broadcast Over \$10 K 1 st Place --WYNCOM --Worldwide Lessons in Leadership 2nd
place --Massachusetts Corporation for Education Telecommunications -
.Zoo Sleuth 3rd Place --Anderson Telemedia --Advancing Women in Business/Grow

Best Broadcast for Public Service

1 st Place --Massachusetts Corporation for Educational Telecommunications . --"Memories, Voices
& Choices: Lessons Learned from the Holocaust and Global Genocides --Show #4"

2nd Place --Hospice Foundation of America --"Living With Grief: At Work, At School, At Worship" 3rd Place --The
Learning Institute for Nonprofit Organizations --"Excellence in Nonprofit Leadership and Management"

Best Production Under \$10,000 1 st Place --Washington State Department of Information Services --L&I
Quarterly Update: "A Conversation with Gary Moore" 2nd Place --The Massachusetts Corporation for
Educational Telecommunications Writers on Writing 3rd Place --Washington State Department of Information
Services "Innovations in Adoption Placement Practices!!

Best Production for a One-Time Event 1st Place --Federal Law Enforcement Training Center --National
Teleconference on Emotional Survival in Law Enforcement 2nd Place --American Music Therapy Association
& N.A.K. Production

Associates --Music Therapy & Medicine
3rd Place --DigitalXpress / GMU TV / The 1998 World Congress on Information Technology --The
1998 World Congress on Information Technology .

PRODUCT/SERVICE A WARDS

Best Network Equipment 1 st Place --VIPswitch --VIPswitch 2nd Place --Starvision Multimedia Corp.
--Digital Media Forum 4800 3rd Place --Accord --Accord Te-communications MGC-1 00

Best Network Service

1st Place --Washington State Department ofInformation Services --The Intergovernmental Network
and K-20 Educational Telecommunications Network .
2nd Place --Vstream -:... Vstream's Solution for Speech Works· 3rd Place --V -SP AN and Mitre
Corporation

Best IP:-Based Conferencing Product 1st Place --Polycom --ViewStation MP, ViewStation SP,
StreamStation and
WebStation 2nd place --White Pine Software --Meeting Point 4.0 3rd Place --VCON --Escort
25

Best Desktop Conferencing Product 1st Place --INTERVUInc, --Netpodium 1.6 or 2.0 2nd Place
--Sprint Business --Sprint Internet Collaboration Center 3rd Place --Polycom --SoundPoint Pro

BestMCU 1st Place --Polycom --ViewStation MP 2nd Place --Starvision Multimedia Corp. --Digital
Media Forum 4800 3rd Place --Accord --Accord Telecommunications MGC-1 00

Best Set-Top/Appliance 1st Place --Polycom --ViewStation MP and ViewStation SP 2nd Place
--SightPath --SightPath Internet Media Appliance, 3rd place --Sony --Contact

Best Streaming Video Software 1st Place --VCON --Interactive Multicast Technology in Meetingpoint
4.0 2nd Place --SightPath --SightPath SODA (Self Organizing Distributed
Architecture) 3rd Place --Kidspeace --Kidspeace/Eloquent Web Outreach Project

Best Collaborative Software 1st Place --SneakerLabs, Inc. --iMeet/iShow 2nd place --Sorenson Vision,
Inc. --Sorenson Envision .. 3rd Place --Tektronix --M2C Video Edge Device w/Conference Maker
Software

Best Broadband Delivery Service 1st Place --Tektronix --M2C Video Edge Device w/Conference Maker Software
2nd place --PictureTel --PictureTel eVideo Streaming Service

Best Conferencing Accessory 1st Place --Global Crossing --Global Crossing Marketing Department 2nd Place
SMART Technologies Inc. --SMARTBoard 500 Series 3rd Place --Elmo --Elmo DT 70

Best Scheduling/Control Software 1st Place --TODD Communications, Inc. --TC Reliance Management
Software
for Interactive Video/Multimedia Systems 2nd Place --Compunetix --ContextWeb Toolkit 3rd Place
--Voyant Technologies Inc. --Ready Access Reservation-less
Conference Calling System

Best Small Group Systems 1st Place --PictureTel --IntellPictureTel TeamStation 2nd Place --Zydacron
--comCenter 3rd Place --Tandberg --Vision 2500

Best Large Group System 1st Place, --Tandberg --Vision 5000

Best Audioconferencing . 1st Place --Vstream --Netcall 2nd Place --Voyant Technologies, Ready Access
Reservation-less'Conference
Calling System ' 2nd Place --Global Crossing --Next-Generation Ready Access 3rd Place
--Soundgear, Inc. --TeleForum Audio Conference Phone

MARKETING & ADVERTISING

Best Print Advertising . 1st Place --AT&T TeleConference Services --"Bridging a World of Ideas" 2nd Place
--WebEx . 3rd Place --Sony Medical Systems --"Technology With Traditional Values"

Best Collateral Advertisement 1st Place --Global Crossing --"Evaluation Lab" . 2nd Place --Voyant
Technologies --"Ready-Access Reservation-less
Conference Calling System" 3rd Place --Dallas Telecourses --"Voices in Democracy"

Best Web Site 1st Place --Multilink --www.multilink.com 2nd Place --V-SPAN --www.vspan.com 3rd Place
--Vstream --www.vstream.com

Best Broadcast Advertisement 1st Place --Kinko's, Inc. --"Head Coach"

PILLAR AWARDS / BEST OVERALL Best Telemedicine Best
Telemedicine --Department of Health, Children's Medical Services
--Child Protection State of Florida

Best **Distance Learning** . Best **Distance Learning** --Texas Education Agency
--"Wired for Learning" A . Multimedia Course in **Distance Learning** Technology

■ -

Best Teleconferencing Polycom

Best Audioconferencing Global Crossing

Best Marketing and Advertising Global Crossing Eyaluation Lab

PEOPLE'S CHOICE AWARD

Best Video Streaming Applicadon Vstream

SOURCE Advanstar Communications CONTACT: Edward Segal ofEdward Segal
Communications, 202-333-7966, telecon@edwardsega1.com

LANGUAGE: ENGLISH

LOAD-DATE: November 5, 1999

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 FOCUS

Example: House of Representatives

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November 7,1999, Sunday, FINAL EDITION

SECTION: NATION/WORLD, Pg. 10

LENGTH: 732 words

HEADLINE: Education; Privilege to necessity; , From the lessons of Socrates to the **virtual high schools** of the Internet, the need for qualified; teachers lives on.; ,

,BYLINE: MICHELE SAGER, ofThe Tampa Tribune;

BODY:

HOMELAND -Brunice R. Helms recalls the glory days of teaching.

Students filed into the schoolhouse quietly' with books in hand, ready and wanting to learn.

There was no fighting or foul language. The teacher was boss. If someone tried to cross her, the paddle ,sat inches away. '

That was the reality in schoolhouses 60 years ago when Helms taught. '

"The teachers were respected and the students wanted to learn from them," she said.

Throughout history, the role ofteacher has been important. '

From the philosophical lessons of ~ocrates and Plato to John T. Scopes and the battle over teaching evolution, teachers have helped push civilization forward. '

They have been considered high-ranking members ofthe community through most of the millennium. They were the few who were educated in grammar, literature and the sciences. They were the ones commissioned to tutor national leaders.

Finding qualified teachers became a difficult task during the 15th century in Europe.

King Henry VI founded J;:ton College, a school for tea'chers, in 1440 because of the scarcity of good masters. The king stressed that without good teachers, the church would weaken since no clergymen would be taught. '

Later, the explosion of schools and absolute need for teachers opened up new economic opportuntIes for women. In 1910, the average teacher was a 25-year-old female who made \$ 500 a year.

By the 1940s, when Helms taught, the majority ofteachers were women. Helms, 80, wQrked at the Homeland School in a small town just south ofBartow. Today, the building is the oldest surviving schoolhouse in Polk County and has been converted into,a museum. When Helms visits, she is reminded how much has changed.

"We didn't have the luxury ofheat or air conditioning," she said. "On cold winter days the class would all huddle together around the fire reading our books. We shivered a lot blt the students

didn't care; they wanted to learn."

1 of 3 11/11/1999 11:52 AM

Today, the status of the teacher has changed in a world of competing service occupations. Low-scale salaries and increased responsibilities have caused many teachers to leave for other careers. There is a national teacher shortage.

HELMS' DAUGHTER, Anita Lyle, is a principal at Lewis Elementary. It is a few miles south of where her mother first taught.

"It's a tough world for teachers today," Lyle said. "Goodness knows the hours are long and the pay sometimes stinks. And with more problems arising at home, teachers are having to play the role of parent."

With discipline not what it used to be, and incidents of school violence in the news, some schools are searching for new ways to maintain behavior standards.

Assistant Principal Bruce Friend has never had to worry about bullies, guns or drugs in his school. At the **Florida High School**, all the students take their courses online.

"It's great because we have the academics of a regular school without the costs of a traditional facility," Friends said.

The **virtual high school** is a state-funded program based in Orlando that offers **high school** credits through the Internet. Students have 24-hour access to Web resources and class assignments. Teachers at the school communicate with students via e-mail and chat rooms.

"The role of teacher is changing," Friend said. "Instead of standing in front of a class lecturing facts, they are using the technology to facilitate learning. They are letting the student take the initiative to find the facts."

With about 1,800 students across the state, **Florida High** serves mostly those who are home-schooled or traditional students wanting extra courses. But Friend believes more Internet schools will arise.

"THE INTERNET brings instant access into your home," he said. "Someday, (students) could get their entire education through the computer."

So, does the evolution of the World Wide Web mean that the traditional teacher could become just another history lesson? Lyle doesn't think so.

"Nothing can replace human contact," she said. "Computers or the Internet can't fulfill a child's physical needs. They can't build self-esteem or provide a comforting hand when a student needs help. Teachers are here to stay and no computer could do justice to their jobs." Michele Sager covers education and can be reached at (863) 683-6538 or msager@tampatrib.com

GRAPHIC: PHOTO (2C),

(C) Bruce Friend, above, is assistant principal of the online school, which offers 24-hour access to class assignments. GREG FIGHT, Tribune photos

TYPE: THE MILLENNIUM AND BEYOND

LOAD-DATE: November 9, 1999

FOCUSTM

Search: General News;virtual university or virtual high school or distance...

To narrow this search, please enter a word or phrase:

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SEATTLE POST-INTELLIGENCER

October 11, 1999, Monday , FINAL

SECTION: NEWS, Pg. A1

LENGTH: 1782 words

HEADLINE: STUDENTS ON THE GO TRY A VIRTUAL NEW UNIVERSITY;
ONLINE WESTERN GOVERNORS U BASED ON COMPETENCY

BYLINE: RUTH SCHUBERT P-I Reporter

BODY: Greg Marshall calls himself "the beta student."

Until two years ago, the computer skills instructor from Bellingham didn't see how he could earn a college degree. His teaching schedule was too erratic, his family obligations too important.

To find a degree program that works for him, Marshall stepped into the rapidly emerging world of **virtual universities**.

He was one of the first students to sign up with Western Governors University - not a school at all in the sense most people imagine.

Born of the collective ambitions of 10 state governors, WGU serves as the broker of distance-learning courses produced by traditional universities and corporations.

WGU also grants degrees based on "competencies," measuring whether students have learned the required subjects through tests, presentations and projects. How they learn the material doesn't matter.

Without a campus or faculty of its own, the virtual WGU aspires to become the educational access node for thousands of students who would not otherwise be able to continue their educations.

To date, however, Marshall is a rarity.

In the first year its portals were open, WGU enrolled only about 120 students in individual courses - in part because it charged a fee that students quickly learned they could circumvent by going directly to the university that produced the course. That fee has since been eliminated.

The four competency-based degrees WGU started in July attracted about 100 students in the first 90 days. It is a modest number, but WGU officials say they're not worried.

"We've always said that we're looking for 300 or 400 by the end of the year, and we're certainly on track to do that," said Robert Mendenhall, who was named president of WGU in March after several years of consulting. Previously he was general manager of IBM's K-12 division.

The new concept in the world of higher education faces some very real questions, however. Do enough students really want to learn this way? And will WGU's degree offerings get lost in the flood of competition?

By 2002, about 84 percent of colleges and universities will offer their own distance-learning courses, according to a report released in January by the International Data Corporation. That year, about 2.2 million college students are expected to be enrolled in courses taught through the Web, television, satellite or plain old-fashioned mail.

As one of the first **virtual universities** out the gate, WGU does have some advantages. It has the

backing of governors in 18 states and Guam. **Washington** Gov. Gary Locke is a co-chairman of the Board of Trustees.

Each state paid \$100,000 to join the consortium, and the project is also financed through grants and products donated by a host of corporate sponsors with a vested interest in seeing online education grow.

Among the biggest contributors, AT&T has given WGU \$1.25 million; Peterson's, the publisher of college guides, has given \$1 million, and Cisco Systems contributed \$250,000.

The advisory board includes Apple, America Online, IBM, Sun Microsystems and Microsoft.

WGU is counting on the idea that competency-based degrees are the wave of the future.

"We think we're in the forefront of that whole movement which is only going to get stronger," said Mendenhall, who is based in Salt Lake City.

To make it work, they will need to sign up more people like Marshall, who hopes to earn a competency-based associate of arts degree by Christmas after next.

Marshall is in many ways remarkably well-suited to the world of virtual learning.

The 31-year-old teaches computer skills seminars at Whatcom Community College. His mission in life, Marshall says, "is to get people to use their computers better."

He hasn't watched television in 10 years, instead going through two or three books a week. He sometimes reads textbooks just because he's interested in the subject matter.

Marshall also makes a great spokesman. A gregarious guy, he has a knack for fostering a comfortable rapport with the students who take his six-hour seminars. The trait served him well when WGU flew him to **Washington**, D.C., in January and again in May to talk to the U.S. Department of Education about the needs of online students.

As a **high school** senior, Marshall was on the management track at Fred Meyer. Giving it up to go to the University of **Washington** seemed foolish at the time.

He thought for years about going back to get his college degree, but that ambition solidified after Marshall started teaching.

"If I want to advance and stay in a community college environment, I've gone as far as I can without a degree," he said.

But the needs of his wife and

7-year-old son meant that he couldn't easily move to attend college. And, because his teaching schedule changes every quarter, Marshall was attracted to the idea of a program that allowed him to study on his own.

Two years ago, Marshall heard about WGU.

The idea for WGU was floated at a meeting of the Western Governors' Association in 1995. In 1998 WGU started publicizing its first programs.

Washington State University handles the registration and billing. The University of New Mexico provides online library access.

At present, WGU offers certificates and associate's degrees in technology-and teaching-related subjects, an associate of arts and a master's in learning and technology.

Students pay WGU tuition and fees - \$2,850 for associate's degrees and post-college level certificates, \$3,350 for master's degrees and \$1,600 for undergraduate certificates - either in an advance lump sum or in installments.

But those relatively low rates don't include the tuition for online courses, which must be paid to the university offering the course.

Students who are interested in pursuing a competency-based degree take an initial round of assessment tests to gauge where they are, then work with an academic adviser on a plan that outlines the tests or projects the student will have complete.

The competency-based degree is perhaps the most controversial component, with some pooh-poohing it as nothing more than a college-level GED.

But WGU President Mendenhall counters that it is hardly a new idea. Doctors take board exams, lawyers have to pass the bar exam and corporate training programs have long required employees to demonstrate what they learned.

"Basically it's a sound idea, but they have to show that it will work, and people want it, and they can get the students," said Frank Mayadas, program director at the Alfred P. Sloan Foundation and a WGU Trustee.

Marshall's shoe box of a home office barely contains the desk, computer and bookshelves crammed inside. A Western Governors University sweat shirt hangs by the door.

When he called WGU to sign up, the competency-based degree was still being developed.

"Initially, I thought it would be quicker," Marshall said. "I thought it was a good way to avoid sitting in classes."

Now, he's not so sure.

From his desk chair Marshall can see seven enlarged calendar pages taped to the closet door, his target dates for taking the assessment in each subject carefully written in.

Oct. 13 is Marshall's target date for mathematics, and problem solving is penciled in for the end of the month.

The lack of firm deadlines from WGU is both the program's strength (think flexibility) and its weakness (think procrastination.)

Marshall has had to move back both the mathematics and problem solving dates once already.

He spent the summer working on the mathematics portion of his degree, aided by such books as "Forgotten Algebra," "Math Smart II," the College Outline Series book on trigonometry and "Geometry: Plane and Practical."

More commonly, students sign up for distance-learning courses to prepare for the assessments, but Marshall is trying to do as much as he can on his own - partially to save money.

"It's a time thing and a money thing," Marshall said. "My thought was I'd study until the point where I couldn't figure it out on my own, and at that point I'd decide whether to take a class or find a tutor.

For him, lack of human contact is definitely the downside to self-study.

"If I had the time, I'd be in a classroom, because I really enjoy learning," he said. "I enjoy telling the

teacher I think they're wrong and having a debate about it."

WGU is now working toward the critical milestone of accreditation.

"The real historic event is going to be that accreditation review," said WSU President Sam Smith, who also serves on WGU's board. "WGU is like a start-up company. It's a new idea."

Although its not the first - Jones International University became the first virtual institution to gain accreditation in March - WGU will be the accrediting agencies' first encounter with competency-based degrees.

A 1998 report from the non-profit Council on Higher Education Accreditation noted that agencies are struggling to keep up with the proliferation of distance-learning programs.

Steven Crow, an executive director at the North Central Association of Colleges and Schools, argues that in some ways, the new institutions are better designed to teach in cyberspace than the traditional universities.

"It's basically designed from the ground up with an understanding of what the clientele might look like," said Crow, whose agency accredited Jones International. "We have seen, I think, in the Western Governors and the Jones Internationals the capacity to design an institution around a new kind of student learner."

As far as accreditation goes, Marshall has hedged his bets: He knows **Washington** State University will honor an associate's degree from WGU. Because he wants a career in educational technology, being WGU graduate No. 1 or No. 2 WGU could have a certain cachet.

"It's going to go great on my resume, because I can say I've gotten a virtual degree," Marshall says.

He sees **virtual universities** opening up possibilities for other students like him, who would have a tough time getting the traditional, on-campus degree.

As the program's beta student, Marshall will work out the bugs. In doing so, he hopes to smooth the path for others.

"For me it's kind of exciting to be a pioneer and watch out for the rattlesnakes along the way."

P-I reporter Ruth Schubert can be reached at 206-448-8130 or ruthschubert@seattle-pi.com

The Web sites

Western Governors

University: www.wgu.edu

Washington State

University Extended

Degree Programs:

www.eus.wsu.edu/edp/

Digital Diploma Mills,

by David Noble: <http://com>

munication.ucsd.edu/dl

Concord School of Law:

<http://concord.kaplan.edu>

Jones International

University: <http://jones>

international.edu

UNext: www.unext.com

NOTES:

TRANSFORMING EDUCATION - In this installment of an occasional series on how technology is changing the way we learn and teach, the Post-Intelligencer examines the rapidly emerging world of **virtual universities**, where students earn degrees online and schools have no campuses or faculty of their own.

GRAPHIC: Color Photo

MERYL SCHENKER/P-I: Greg Marshall, a computer skills instructor in Bellingham, is also working for a degree through the new, somewhat experimental and Web-based Western Governors University. "If I want to advance and stay in a community college environment, I've gone as far as I can without a degree," he said.

LANGUAGE: ENGLISH

TYPE: SERIES MAJOR STORY

LOAD-DATE: October 13, 1999

FOCUSTM

Search: General News;virtual university and high school and washington

To narrow this search, please enter a word or phrase:

Example: House of Representatives

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virtual high school

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1. Welcome to Virtual High School!

Campus Life Yes, school can be cool! Check out this fun stuff for Students, Faculty, and Visitors! Academics Go straight to class, browse the course catalog, or attend a demo course. About Us What is it? Where is it? And why it's cool to go to..
vhs.concord.org

2. The Virtual High School - Welcome

Virtual High School. An online high school containing courses approved for Ontario credits. The curriculum of the courses follow the Ontario Curriculum Guidelines and the content is presented as electronic textbooks. These e-texts are extensive,
www.virtualhighschool.com

3. Maryland Virtual High School: Main Page

Find out about the origins of MVHS or what's new, obtain formal reports and newsletters in PDF format, or take a tour of our web site. Access collaborative projects, system dynamics activities, computational lessons using MATLAB, and miscellaneous.
mvhs.mbhs.edu

4. Kitsap Family Virtual Reunion

YES, Membership is FREE!! This is a FUN! place.. Search the ALUMNI DATABASE where past GRADUATES, RESIDENTS and FRIENDS of Kitsap County gather to communicate. Please make your selection AND then choose the decade you would like to visit NORTH..
kitsapfamily.com

5. Jackson High School Virtual Yearbook

An online yearbook for Jackson High School in Jackson, Michigan
www.puting.com

6. Wooster High School Music Facilities Virtual Tour

Wooster High School Music Department Virtual Tou
www.whsmusic.nvi.net

7. Plano Senior High School Virtual Alumni Association - Plano, Texas

The Plano Senior High School Virtual Alumni Association Home Page helps alumni stay in touch, and, helps reunion committees with their work
www.enol.com

8. Sayre Area High School Virtual Art Gallery

Shown above is a sculpture created by junior art student Kevin Kline. The sculpture shows the creative power that is contained in each artists hand. The Sayre Art Department is proud to announce the winners of the 1998 "Top Ten" art show that was..
www.cyber-quest.com

9. The Brooke High School Virtual Tour

The Rest of Brooke High School These pictures are: Writing Lab (left) and the gymnasium (right). It would be hard to conclude a tour of Brooke High School without talking about and showing all of our other aspects which other pages fail to mention.
p18.s502.c10.k12.wv.us

10. **Lucerne Valley, California - High School - Interactive Photo Model & Virtual Tour**

Photo tour of Lucerne Valley California, High School Photograp
www.aeve.com

✓ 11. **A Real Virtual High School**

A Real Virtual High School [Follow Ups] [Post Followup] [ttd 710 Discussion Board] [FAQ]
Posted by Steve G on March 31, 1999 at 15:16:07: If any anyone would like to visit the Virtual
High school that I found through the AASA monthly..
www.usd.edu

12. **1st Stop: Leonardtown Maryland Virtual High School**

CC-Link Your Community & Consumer Link to the World-Wide Web and the Internet LHS
Maryland Virtual High School Leonardtown High School is one of 16 schools participating in the
Maryland Virtual High School Math & Science Project. CC-Link Index The.
www.cc-link.com

13. **USD 458 Virtual Charter School: Physical Education (High School)**

Related pages.. Questions/Answers Overview Contact Info Course Descriptions Enrollment
General Info Textbooks Physical Education (High School) Students learn basic games and
exercise along with good sportsmanship and attitudes. This course is..
www.usd458.k12.ks.us

14. **James M. Bennett High School - Virtual Tour - About JMB**

A Wing | About JMB | Athletic Fields | Auditorium | B Wing | Clipper's Galley | E Wing | F Wing |
Gym | Library | Main Office | Portables | School Store Virtual Tour - About JMB James M.
Bennett High School, constructed in 1962, has more than 100..
clipper.jbhs.wi.k12.md.us

15. **Lake Placid High School Virtual Field Trips**

Come join the Lake Placid High School students to view what they find fun and exciting in this
Olympic Village. We have created tours of seven different attractions in the Adirondack area. To
enter a tour, click on its image to the right or below.
www.lakeplacid.com

16. **CyberSchool**

What is CyberSchool? Courses Costs Contact Info Sponsors Registration Forums Search
Teacher's Workroom CyberTeachers Wanted Guestbook & Listserv Brought to students by
©1995-1999 Lane County School District 4J Eugene, OR | Send comments and..
cyberschool.4j.lane.edu

17. **Student Virtual Desktop**

Princeton High School's Student Virtual Desktop is the student's guide to Daily Activity on the
Internet including References, School Updates, Current Events and Weather
www.phs.princeton.k12.oh.us

18. **Brunswick High School Virtual Book Fair**

BHS Virtual Book, Music CD, and Gift Fair Buy your books, audio books, music CD's, and gifts
from our BHS virtual book fair to help us earn money to implement our technology plan. How
This works Christmas Gifts - Wrapped and Delivered! Young Adult.
www.glynn.k12.ga.us

19. **The Brooke High School Virtual Tour**

The Main Office The Main Office is the keystone to the school. Virtually everything is done
through this office, either directly or indirectly. Dave Walker, the principal of Brooke High, can
usually be found here, working hard to make Brooke High..
bhs.brook.k12.wv.us

20. Library Entry | Virtual High School

ThinkQuest Library Entry ThinkQuest Entry Virtual High School [Click to Enter] Our entry is a virtual school house with many different subjects to study. Our entry teaches everything from different forms of writing to the solar system. The site is.
www.advanced.org

21. Virtual High School: Virtual Tour

Learning Scenarios in the Virtual High School (Click Here to find out how to visit the VHS in Active Worlds) Enter VHS Welcome to the Virtual High School! Inside Quad Francisco Hernandez enters and goes straight into the Quad. Real Audio Intro to..
www.vhs.ucsc.edu

22. Welcome to Ward Melville High School Home Page

Virtual Alumni Directory Welcome to Ward Melville High School's Alumni Directory. Your own Virtual High School Reunion! Check the directory to see how your friends are doing. Now Ward Melville has it's own Virtual Reunion Page. Information on..
www.li.net

23. Belvidere High School Class Of 74

Belvidere High School '74 A Virtual Reunion! This web site is a place for members of the Belvidere (New Jersey) High School class of 1974 to gather and share information. Class Roster. This link provides a list of names as well as links providing.
www.geocities.com

24. Northport High School Virtual Reality Panorama

The VR Tour of Art Room A106 in Northport High School, Northport, New York, March 1997 This virtual reality tour was composed by Art teacher, Margaret Minardi; photographed and made into a CD-ROM by Art teacher, Peter May and added to the Northport
admin.northport.k12.ny.us

25. Fremont High School Virtual Media Center

Schools (K-12): CyberSchool The Cyberspace Middle School International WWW School Registry HotList of K-12 Internet School Sites Web 66 Go back to: Media Cete
www.fhs.weber.k12.ut.us

26. Welcome to Ithaca College, Ithaca NY

Discussion Series on Islam Family Weekend Homecoming '99 Racial Awareness Series Lecture Welcome People General Information Mission A Brief History Campus Map Traveling to Ithaca Employment Opportunities Alumni Relations Directories Faculty Home..
www.ithaca.edu

27. Maryland Virtual High School: Project Measure the Earth

The Maryland Virtual High School Sun-Projects: Measuring the Earth Entry Form One entry per school !! Sorry, this form does not process any data yet Date of Experiment mm/dd/yy: Name of school: Data Collected by: School Latitude: School Longitude.
wwwbib.informatik.tu-muenchen.de

28. Virtual Tour of Nipmuc Regional Middle/High School

Click here to begin! Home | Welcome | About Paul Daigle | In the News | About Nipmuc Regional | Block Scheduling | Links Photo & COPY; 1998 Reproduced with permissio
www.massed.net

29. Springfield High School

Springfield High School Home Page, Springfield Illinois
www.shs.springfield.k12.il.us

30. Virtual High Schools

New Trier High School Online Curriculums Online Business Curriculum Outlines
<http://hurricane.heritage.nn.k12.va.us/public/currics/busine ss.htm#EVANS2> Virtual High School
<http://www.virtualhighschool.com/> Maryland Virtual High School <http://mvhs1.nths.newtrier.k12.il.us>

31. Welcome to the CHS Virtual Tour!

Chaffey High School © 1993-1999 Chaffey High School. Site Map Welcome to Chaffey High School's Virtual Tour Home Page [Photography by Annie Steritz, et alii] About the Chaffey High School Virtual Tour Last Updated October 17, 1999 Chaffey High..
www.chaffey.org

32. Maryland Virtual High School: Measure the Earth

The Maryland Virtual High School Sun-Projects: Measuring the Earth Welcome to the Sun-projects corner! This area will provide the opportunity for engaging your students in some collaborative projects using data related to the position of the earth.
www.supercomp.org

33. Placer High School

School Information Student Activities Student Publications Departments Virtual Library Alumni District Sites General Information "It's Great to be A Hillman!" 275 Orange St Auburn CA 95603 (530) 885-4581 Fax (530) 823-5770 Comments or information..
www.puhsd.k12.ca.us

34. IWC Virtual City Hall, Belgaum, St Pauls High School.

Belgaum St Pauls High School. [Follow Ups] [Post Followup] [IWC Belgaum] [FAQ] [IWC Virtual City Hall] This message posted here by Sanjiv Doddanavar [WINGATE..tor.istar.ca 202.54.80.57] on February 14, 1999 at 00:56:33: Hi i am sanju ex..
www.himanshu.com

35. A Virtual Present

Send and receive a VIRTUAL PRESENT - or gift at the speed of the Internet and include a postcard with your packag
www.virtualpresents.com

36. Weslaco High School Panther Page

WHS WHS Panthers Weslaco High School Weslaco, Texas WHS On Line Administrator Resources Alumni Page Faculty Web Pages Weslaco Virtual Museum WHS Newspaper On Line WHS Sports Contact Us HiLINE's "Best of the Web"
www.weslaco.isd.tenet.edu

37. Hilbert High Virtual Tour

The Hilbert High School Web Page has moved. The new address is: <http://hilbert.k12.wi.u>
www.athenet.net

38. -Ponchatoula High School - Green Wave -] [- Web Page -

Directories About Academics Alumni Athletics Calendar Internet Library.PHS Library News Organizations ThinkQuest 99 Teacher's Lounge Technology Virtual Tour Links EDUC 643/675 General PONCHATOULA HIGH SCHOOL <http://www.i-55.com/~phs> Ponchatoula..
www.i-55.com

39. John Marshall High School

San Antonio John Marshall High School - a Virtual Reunion page with photos of the Class of '68
www.concentric.net

40. Welcome to the CHS Virtual Tour!

Chaffey High School's Tiger Campus Virtual Tour <http://www.chaffey.org/about/tour/> mirrored at <http://www.primenet.com/~blitzw/chaffey/about/tour/> CHS Home Virtual Tour Tour Index Campus MAP Site Map Welcome to Chaffey High School's Virtual Tour..
www.primenet.com

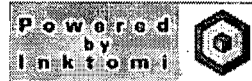
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The **Florida** Times-Union (Jacksonville, FL)

October 17, 1999 Sunday, Georgia Edition

SECTION: METRO; Pg. B-1

LENGTH: 654 words

HEADLINE: Clarke students enter virtual school

BYLINE: Eric Gonzalez, Morris News Service

BODY:

ATHENS -- A classroom with no books, no chalkboard and full of mice. It could be the wave of the future.

Fifteen Clarke County School District **high school** students are among the first in Georgia to take courses in the **Virtual High School**, a national collaboration supported by a U.S. Department of Education grant that offers more than 100 courses over the World Wide Web.

For elective credit, students at Cedar Shoals and Clarke Central **high schools** are taking 15-week courses such as evolutionary genetics, number theory and aviation history.

High school teachers from across the nation teach courses of their choosing to up to 20 students, and most classes are filled to capacity. **In most cases, students can participate in VHS only if a teacher from their district is teaching a course.**

Students are supervised by a teacher in their district, but it's not likely they will ever meet the instructors or fellow students within their course, though they do participate in discussion groups over the Web. They'll do most of their work on their own over the computer, a concept that's already become popular in the college community.

Instead of assignments on the chalkboard, everything students need is a series of clicks away. Printers are the equivalent of textbooks, with some students taking home inch-thick reams of reading materials.

'I thought this would be easy because I'm pretty good with computers, but it's not,' said Bret Barkelew, a Clarke Central junior taking evolutionary genetics. 'I wanted to do VHS and found a class that interested me. I kind of freaked out when I saw all my assignments, but I'm doing fine now.'

Richard Shoemaker, a longtime English teacher at Clarke Central, is overseeing the program at both **high schools**, and teaching a VHS course of his own, 'Exploring Themes in African-American Literature.' Apparently, the course is popular, because 21 students -- one more than the supposed limit -- are taking it, he said.

Like Barkelew, Shoemaker has had some initial stress with his course, which he works on at least three hours a day. He's not teaching English this year, instead focusing on his VHS class and helping with training teachers and other staff in technology.

'I can't believe how much fun it has become. I'm having a blast, but it is hard work,' he said. 'I've had to rework little things on my course so many times and will keep doing it.'

Students and teacher agree the biggest adjustment to make with VHS courses is the **lack of personal contact and direct feedback. Also, assignments are generally due once a week, potentially leaving behind the student who lacks discipline,** Shoemaker said.

'It requires a lot of drive to succeed, and a few students are getting left behind, but it's my job to help keep them on line,' Shoemaker said.

Planned upgrades of the school district's instructional computers could speed up connections, and eliminate the occasional glitches of being unable to get on the Web. Despite these minor hang-ups, Clarke Central senior Rachel Steffens -- the only girl taking a VHS class -- said she's very pleased with her short-story writing class.

'I was hoping I'd learn some different methods of writing, and I have. I just take the little problems in stride, and overall they've done a really good job putting everything together,' she said.

Apparently others agree, said Shoemaker, because the number of courses offered next year is expected to triple after tripling once already this year. About 20 Georgia school districts have incorporated VHS this year, and 40 more hope to implement VHS next year, he said.

'I think this program will succeed more and more, because it has a place in most schools,' Shoemaker said. 'It's not the answer, but it does provide tremendous opportunities for schools. The smallest school district could have access to materials that just wouldn't be possible otherwise.'

GRAPHIC: Andrew Davis Tucker/Morris News Service 1. Photo: (c) Site coordinator Richard Shoemaker talks with students while they participate in the **Virtual High School**. 2. Photo: (b/w) Service Senior Andrew Hearn reads a novel for his World Literature on Film class, taught through a **Virtual High School**. The U.S. Department of Education-sponsored program offers more than 100 courses over the Internet.

LANGUAGE: ENGLISH

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August/September 1998

Grant Awards

eSchool News Staff Reports

\$33 million from Texas Education Agency

For the state's Technology Integration in Education program, which is funded through the federal Technology Literacy Challenge Fund, \$33 million to 38 Texas school districts and consortia.

(512) 463-9734

<http://www.tea.state.tx.us> \$15 million from National Science Foundation

For the Urban Systemic Initiative program to improve math, science, and technology education among low-income school systems, \$15 million over five years to the Duval County (Fla.) public schools.

(703) 306-1234

<http://www.nsf.gov> \$2.1 million from Idaho Council for Technology in Education

Through the federal Technology Literacy Challenge Fund program, \$2.1 million to 23 Idaho school districts.

(208) 332-6972

<http://www.sde.state.id.us/Dept> \$2 million from Apple Computer

For its Education Grants program, which supports innovative uses of technology in the classroom, over \$1 million to 10 U.S. schools. In an unrelated grant, Apple also has pledged up to \$1 million in network software and training to 2,200 Los Angeles County schools.

(800) 974-2974

<http://www.apple.com/education/k12/teachlearn/edgrants.html> \$2 million from Southwestern Bell Foundation

To develop educational programs using interactive television and other telecommunications systems, \$2 million to 79 public

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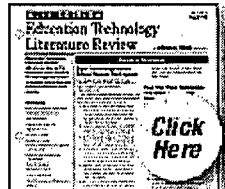
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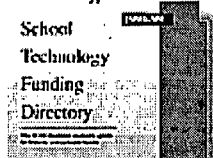
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and other telecommunications systems, \$2 million to 79 public and private schools and districts throughout the state of Missouri.

(800) 591-9663

<http://www.sbc.com/About/Foundation/Home.html> \$500,000 from Cisco Systems, Inc.

Through its Virtual Schoolhouse Grants program, which helps wire schools to the internet, \$500,000 in cash, networking equipment, and training to 50 U.S. schools.

(800) 553-6387

<http://www.cisco.com/edu> \$500,000 from The Learning Company

To help promote literacy and reading education in early childhood programs, \$500,000 worth of The Learning Co.'s "Reader Rabbit" software to the 50 largest K-12 public school districts that make up the Council of Great City Schools.

(800) 685-6322

<http://www.learningco.com> \$175,000 from Compaq Computer Corp.

Through its Teacher Development Grants program, which recognizes creative professional development projects, more than \$175,000 in cash and technology products to 34 K-12 schools.

(800) 888-3224

<http://vemprocr.compaq.com/ccn/gem.asp> \$60,000 from Toyota USA Foundation

To conduct distance-education teacher training in rural areas of Utah, \$60,000 to the Utah Educational Network of Salt Lake City.

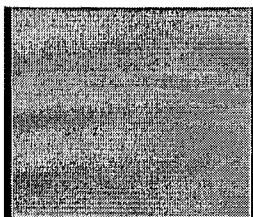
(310) 618-6766

<http://www.toyota.com/times/commun/feature/foundhome.html> \$15,000 from W. K. Kellogg Foundation

To upgrade the computer and technology systems of this rural high school, \$15,000 to the Arthur County School in Arthur, Neb.

(616) 968-1611

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October 8, 1999, Friday MET/METRO

SECTION: NEWS Pg.01a

LENGTH: 1216 words

HEADLINE: KENTUCKY WILL PUT CLASSES ON INTERNET: Cyber **high school:** First in U. S.
Program adds course options for small schools

BYLINE: ROBERT T. GARRETT, The Courier-Journal

SOURCE: STAFF

DATELINE: FRANKFORT, Ky.

BODY:

J
Kentucky will become the first to offer a statewide system of **high school** courses over the Internet, giving students the opportunity to take advanced classes that would otherwise be unavailable.

In announcing the Kentucky Virtual **High School** program yesterday, Gov. Paul Patton noted that Kentucky has 19 **high schools** with fewer than 200 students. In such small schools, a broad curriculum isn't available, he said. "This is an inequity that should not exist and is unacceptable."

And State Education Commissioner Wilmer Cody said students also will be able to take classes that until now, because of teacher shortages in science, math and language instruction, were not available.

The program will begin in January.

Kentucky was able to beat other states in launching such a service because "by almost all measures that I know of, we're the most wired statewide school system in the nation," Cody said.

In the first eight years after the Kentucky Education Reform Act was passed in 1990, the state and its 176 school districts spent about \$ 600 million to put computers in classrooms, Cody said.

He noted that with help from the federal government and local districts, the state will have spent another \$ 600 million between July 1998 and next June to finish the job.

"The change in commitment has just been phenomenal," Cody said.

As described yesterday, the Kentucky Virtual **High School** will be self-sustaining, except for \$ 36,000 in start-up costs paid by the state. Participating school districts will pay \$ 300 per student for a semester-long course. That will pay for the right to use curriculum developed with federal funds at the University of Nebraska.

Prospective students may learn about course offerings by checking a Web site for the virtual **high school** - www.kvhs.org.

Students will sign up at their local **high school** and work with a teacher trained in teaching via the Internet. All the classes will be available online with companion materials in some cases available in CD-ROM and video.

The student will keep in touch with the teacher, do assignments, take tests and receive regular credit for the work.

"IT SOUNDS pretty nifty," said National Merit Scholarship semifinalist Leslie Schwindel, 17, a senior at Hancock County High who said she would like to take college-level calculus before she graduates next spring.

"I have a study hall next semester, so I could do something then," she said. "It would work out pretty well."

Hancock County High, in the Ohio River town of Lewisport, east of Owensboro, has 30 teachers and 450 students. It tries to offer college-preparatory courses and some collegelevel courses, said principal Robert Kerrick.

But there has been no good way to fill gaps in the school's curriculum, he said. For instance, the six "**distance learning**" courses that Kentucky Educational Television offers via satellite require the use of a classroom, which means that at least several students would have to be interested.

Also, "we had to have a teacher in the room with those" courses, Kerrick said.

But the new service will offer independent study by individual students, with only minor demands on the time of school personnel.

"I THINK it's a wonderful idea to be able to go online and have the capability of getting those courses," said Terry Sturgill, principal of 310student Fleming Neon High in mountainous Letcher County. "It's going to take a lot of self discipline for students."

Only a small number of highly motivated students are expected to sign up for virtual **high school** courses.

Mary Beth Susman, chief executive officer of the Kentucky Commonwealth **Virtual University**, which will provide online library services and a help center for high schoolers in the program, said 3,000 to 5,000 students could enroll in the program's early stages.

That would be only 1.5 percent to 2.5 percent of the state's 195,000 **high school** students.

However, Susman said the system would be capable of growing to serve as many as 100,000 students.

KET's six satellite-broadcast courses and two Internet courses now have 2, 798 Kentucky students enrolled in them, said KET official John F. Gorman.

Virginia G. Fox, KET's executive director, said she expects few of those taking the broadcast courses to switch to online instruction.

THE BIG CHALLENGE facing the Kentucky Virtual **High School**, she said, will be recruiting non-traditional students, such as immigrants who speak English as a second language and Spanish-speaking children of migrant farm workers.

"That is a sleeping giant out there," a growing population that the state's educational system hasn't served well, Fox said.

The courses will also be available to others, such as adults working toward a GED or regular diploma, home school students and youngsters in state juvenile justice facilities. Adults, those in private schools and others outside the **high school** will probably have to pay the \$ 300 course fee themselves. That price covers tuition and all materials.

"It won't be more than \$ 300," said Ed Ford, a top aide to Patton on education matters. "We're just trying to recoup our costs."

Although school districts in other states have online **high school** courses, and a few districts already use courses developed by the University of Nebraska spinoff firm, Class.com Inc., Patton aides said no other state has a statewide program.

"This is possible only because we have the connectivity we have at this moment," said Deputy Education Commissioner Gene Wilhoit, referring to the fact that 87 percent of Kentucky's 1,366 public schools had a high-speed Internet connection as of July 1. All will have such a connection by June.

"Other states don't have that kind of connectivity," he said.

WHILE STATE officials said rural schools will be the main beneficiary, online learning may have appeal in larger **high schools** as well.

Katherine Hilton, 14, of Versailles, said she might take one of the online courses someday - in part because they may be taken after school hours and offer learning at one's own pace, free of classroom distractions.

"It sounds, like, pretty interesting to learn from a computer," said Katherine, a freshman at Woodford County **High School** who has two years of experience at surfing the Internet to do research for class reports.

"I'm not really good at math," and the individual attention from a virtual instructor "would help me some," she said.

ONLINE CLASSES

These classes will be offered through the Kentucky Virtual **High School** program:

Algebra I and II

Calculus (advanced

JJplacement, college level)

Chemistry I and II

Geometry I and II

German I and II

Latin III

Latin literature

Physics I and II

Spanish I and II

Students will sign up at their local **high school**. More information is available on the Internet at www.kvhs.org.

Education Commissioner Wilmer Cody said Kentucky could launch a virtual **high school** before other states because "by almost all measures that I know of, we're the most wired statewide school system in the nation."

Caption: Rebecca Edwards, left, and Katherine Hilton, both freshmen at Woodford County High, said they'd be interested taking classes in the virtual **high school**.

GRAPHIC: PHOTOS BY BUD KRAFT, SPECIAL TO THE COURIER-JOURNAL

LANGUAGE: English

LOAD-DATE: October 9, 1999

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K-12 Courses Offered at a Distance

More and more K-12 students and their parents are participating in distance learning or homeschool programs. Such alternatives to traditional schooling may include augmenting a traditional program with one or two courses offered at a distance or may mean obtaining a high school diploma without ever stepping foot in a classroom. We have listed some online and correspondence K-12 courses, as well as homeschooling resources, but strongly encourage the reader to ascertain the value of the curriculum for her own needs. This list is by no means complete as the number of institutions offering K-12 courses at a distance will continue to increase.

Note: * Links will soon be updated.

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Resources

Other Homeschool
Online Resources

Online and
Correspondence
K-12 Schools and
Courses

Homeschooling Resources

National Organizations

- National Home Study Council, Washington D.C., (202) 234-5100
- National Home-School Assn. P. O. Box 157290 Cincinnati, OH 45715 (513) 772-9580
- Home-School Information Resource, National Center for Home Education P. O. Box 159 Paeonian Springs, VA 22129 (503) 882-4770
- Home School Legal Defense Association P.O. Box 159 Paeonian Springs, VA 22129 (503) 338-5600 <http://www.hslda.org>
- National Challenged Homeschoolers Associated Network, 5383 Alpine Rd. SE, Olalla, WA 98359, 206/857-4257.
- Home Education International 24 Madison Street Auburn, ME 04210
- *Home Education Resource Guide* by Don Hubbs 1994 is \$11.95 from Blue Bird Publishing 602/968-4088

Other Homeschool Online Resources

National Home Education Research Institute

The National Home Education Research Institute does research and provides facts and statistics that may help when dealing with the curious or critical, legislators, or courts of law. This is a nonprofit 501(C)(3) organization.

California Homeschool Network

The Homeschool Guide to the Online World! offers a book and includes links to many homeschooling sites.

This site provides a nice list of Homeschool Organizations by state

Homeschool Easy Records is a full featured program designed to create lesson plans and keep complete records of your children's Home School education. This site also has references to other record keeping software and homeschool resources.

Online and Correspondence K-12 Schools and Courses

CyberSchool

The Eugene Public School District 4J in Eugene, Oregon has created CyberSchool, an online part of an Oregon public school. CyberSchool will be offering credit for online high school level classes over the Internet for students worldwide. They also have some actual teaching materials - lessons, audio lectures, etc. - under "JFK and the American Presidency" at CyberSchool. For more information contact: Tom Layton at layton@4j.lane.edu

Cyber High School

This is a private, on-line, college preparatory school that intends to serve students worldwide. The instruction takes place over the Internet, using a curriculum specifically designed for students who are motivated to work independently toward college entrance. For more information contact: Cyber High School or email: cyberhi@webcom.com

Jefferson County Public School District*

This fall semester, Jefferson County Public School District will be offering online courses for K12 students across the country. The courses are Web-based, built around standards, and integrate high levels of communications and interactions, both asynchronous (email) and real-time (chat; discussion groups; private consultations). These online courses are beyond the standard email-based online courses. Students participate in numerous group interactions online, real-time with other students, their teachers, and mentors using FirstClass. Any K-12 student with Internet access can choose to enroll in Jefferson County Public School District's credit-based courses, which will get underway in October. For more information contact Diana Derry, Internet-based Education Program Coordinator, Jefferson County Public School District*, Denver, Colorado, 303/982-6945, diderry@jeffco.k12.co.us

Laurel Springs

Laurel Springs School curricula provide quality academic programs for lower school, pre-Kindergarten through grade eight; and high school, grades nine through twelve. Last year they launched the most successful, online secondary school. Online Learning provides students at the sixth through twelfth grade levels with self-paced coursework in all academic subjects. Support programs are presently being designed in the form of lower-school parent and teacher training courses. These courses will be available on the Internet by Fall 1996. For more information contact Laurel Springs School, P.O. Box 1440, Ojai, CA 93024-1440, 805-646-2473 E-mail: lss@laurelsprings.com

MindQuest

MindQuest is an on-line public high school diploma program that opened in late September 1995 and planned to limit its first semester to 25 registered

students. The program is available entirely through the Internet and is open to anyone who left high school without a diploma.

A brain child of SHAPE, a suburban Minneapolis adult education program, Mindquest is free to Minnesota residents under age 21. For others, tuition is \$4,500, but a tuition arrangement may be possible through a local school district. Computers and modems are available for long-term loan for qualified applicants, and necessary software has been partially funded through a grant from Tribe Computer Works and SoftArc First Class Software.

Each student works with a Mindquest counselor to develop an individualized learning plan that takes into account their learning style, educational needs and interests. Previous high school credits and other prior learning experiences can be applied toward graduation. Students will actively participate in courses via the Internet and communicate through Mindquest bulletin boards or private e-mail with other students, counselors, advisors, and teachers. Students will receive their diploma from Bloomington School District #271 or from another school district with agreement from the local principal. For more MindQuest information send e-mail to shape4@primenet.com or contact Kevin Byrne, SHAPE Coordinator at 8900 Portland Ave., Bloomington, MN 55420.

Net School of Maine

The Net School of Maine will use CU-SeeMe to provide core curriculum for homeschool and other students who want to enhance or supplement their present education. CU-SeeMe Schools support services provided by Global SchoolNet Foundation and Canon Visual Communications Systems Small classes with global reach. For more information email Frank J. Heller global@biddeford.com Global Village Learning of Brunswick, Maine. (207) 729-6090.

The University Of Florida Department Of Correspondence and Distance Education

The University of Florida Department of Correspondence and Distance Education offers more than 40 High School courses available through correspondence and six through email. For more information contact the University of Florida Department of Correspondence and Distance Education, 2209 NW 13th Street, Suite D, Gainesville, FL 32609, 800/327-4218, 904/392-1711, fax 904/392-6950, or email learn@nervm.nerdc.ufl.edu

The University of Nebraska, Lincoln

The University of Nebraska, Lincoln Division of Continuing Studies houses the UNL Independent Study High School. This independent school has a principal, and academic advisor, and a teaching staff that is available for consultation about and assistance in any course. For more information contact the University of Nebraska, Lincoln, Division of Continuing Studies, 33rd & Holdredge Streets, Rm 269, Lincoln, NE 68583-9800, 402/472-4321, or email unldde@unl.edu

The University of Texas Telelearning Center

The University of Texas Telelearning Center offers credit courses for Migrant or homeschool students.

The University of Vermont

The University of Vermont Distance Learning Network offers Advanced Placement Calculus and English courses for Vermont High School students.

Good Luck!

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K-12 Distance Education Examples

Virginia Steiner

This page is meant to demonstrate the variety of K-12 distance education delivery modes, as well as the variety of originators. In the next few months we plan to expand our investigation of K-12 distance education programs and will post our results at this site.

- [Alyeska Central School - Centralized Correspondence School](#)
- [Algebra Across The Wire - Migrant Education Program](#)
- [Brisbane Elementary & The LiveBoard](#)
- [California Homeschool Network](#)
- [CyberSchool - Online High School](#)
- [Cyber High School - Online Private College Preparatory School](#)
- [Mindquest - Online High School Diploma Program](#)
- [Oregon State University - Satellite Oceanography](#)
- [SE-TV - Digital Educational Television](#)
- [The University of Connecticut - Compressed Video Project](#)
- [The University of Florida - High School Distance Education](#)
- [The University of Vermont - Advanced Placement Courses](#)

Alyeska Central School

Located at the Alaska Department of Education, the Alyeska Central School offers a full range of Alaska elementary and secondary courses free to all Alaska residents. Course materials are sent by regular mail, but access to the UACN electronic mail system is provided for student-teacher contact. Occasionally, conference calls are added to a course for group interaction. The courses are currently being rewritten to incorporate electronic mail.

For more information contact: The Alaska Department of Education, 3141 Channel Drive, No. 100, Juneau, AK 99801-7899, 907/465-2835 or visit:
http://www.educ.state.ak.us/Alaskan_Schools/ACS/Home.HTML

Algebra Across The Wire

The UT TeleLearning Center (UTTLC) at the [University of Texas at Austin](#) delivers six high school classes by [audioconferencing](#). The classes include Health Science Technology Education, TeleLanguage (Spanish and German), TeleRap (a roundtable discussion for teenagers), and a special migrant student program called Algebra

Across the Wire. All courses are approved by the Texas Education Agency, count toward graduation, and fulfill Texas essential elements.

Algebra Across the Wire is funded by a Texas Education Agency Migrant Student Program contract. Migrant students usually withdraw from schools, attend classes in various states, and then return to their original school. Unfortunately, this often results in partial credits that do not count toward graduation. Therefore, Algebra Across the Wire offers an alternative credit option to secondary migrant students as they travel or attend summer school.

UTTLC offers five sections of Algebra Across the Wire each summer, with a maximum of 20 students per section. To date, the sections have had between 10 and 15 students. While the courses are designed to meet the Texas Essential Elements criteria, and so far only Texas migrant students have participated, the program is not limited to Texas students. The program has been delivered to students in Greeley, Colorado and in Laredo, McAllen, and El Paso, Texas. This past summer the program served three sites with two of the sites extending Algebra 1A and offering Algebra 1B as well.

"The pilot program proved a viable alternative to face-to-face instruction: although most of these students had taken algebra before and had failed the course, the final grade average in the Algebra Across the Wire class was 88%, with all students passing the course. "

The course runs 4-8 weeks depending upon the amount of time in one location and number of hours spent in class per day. The students arrive by 7:30 am and spend an hour going over the previous assignment. The instructor joins them for an hour at 8:30 and again at 10:30. In between the students work on some problems with each other and a facilitator. The instructor keeps an interaction log, recording frequency and duration of each student's participation. The instructor found that student interaction increased both in frequency and duration as the course progressed. The instructor also discovered that the log helped improve gender equity.

For more information about this program, contact: Darcy Walsh Hardy, Ph.D., Director, UT TeleLearning Center, The University of Texas at Austin, EIMC, P.O. Box 7700, Austin, 78713. Phone 512/471-2902 or Fax 512/471-7853 or Janice Bailey, Administrative Assistant 512-471-9285 or 1-800-252-3461. You may also visit <http://wwwhost.cc.utexas.edu/depts/eimc>

Brisbane

Last year a 5th grade class at Brisbane Elementary School, just south of San Francisco, utilized a Xerox loaned LiveBoard. Bob Abaya, the principal, put together a computer lab. The entire class got so involved in creating essays, social study reports, science reports, math lessons, etc. that there seemed to be an overall elevation in class participation.

Students developed materials on their computer desktops and then presented those materials to the entire classroom. The level of work was very high. The success of the LiveBoard with the use of the computer lab has caused the other two schools in the district to want a LiveBoard.

The technology affords collaborating schools a shared surface that allows them to interact with other teachers. This can all be done while going over a lesson with

students, and allows the lesson to develop with the students. Each lesson can be adapted for each class and saved for future use and sharing.

A year of research with project SOL (Science-On-Live) has just been completed. SOL utilizes a pool of approximately 100 scientists and the LiveBoard to deliver classes to remote classrooms where students participate with hands-on materials. Participating classrooms have included Brisbane Elementary, Lincoln Elementary in Newark, and Garden Hill and Edmonston in Norwalk-LaMirada, Los Angeles County.

Cyberschool

The Eugene Public School District 4J in Eugene, Oregon is offering high school level credit classes over the Internet for students with email and World Wide Web access. These CyberSchool classes are open to students worldwide with no tuition or fee. However, space is severely limited. This program currently offers 10 classes. They are not planning to produce a full four-year curriculum, but hope that such classes will some day represent 20%-30% of a student's educational experience.

For more information contact: Tom Layton at layton@4j.lane.edu or visit: <http://cyberschool.4j.lane.edu/>

Cyber High School

This is a private, on-line, college preparatory school that intends to serve students worldwide. The instruction takes place over the Internet, using a curriculum specifically designed for students who are motivated to work independently toward college entrance.

For more information contact: <http://www.cyberhi.org/> or email: cyberhi@webcom.com

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Each student works with a Mindquest counselor to develop an individualized learning plan that takes into account their learning style, educational needs and interests. Previous high school credits and other prior learning experiences can be

applied toward graduation. Students will actively participate in courses via the Internet and communicate through Mindquest bulletin boards or private e-mail with other students, counselors, advisors, and teachers. Students will receive their diploma from Bloomington School District #271 or from another school district with agreement from the local principal.

For more information visit: <http://www.mindquest.org>, e-mail Mindquest at shape4@primenet.com or contact Kevin Byrne, SHAPE Coordinator at 8900 Portland Ave., Bloomington, MN 55420.

Oregon State University

Oregon State University offers a high school Marine Biology and Oceanography course over a C-Band satellite that provides coverage to Canada and the United States, including Alaska. The course, Exploring Our Oceans, is taught by Hilary Staatz, who received the 1995 national award for Excellence in Distance Learning Teaching from the United States Distance Learning Association (USDLA). The course consists of three live broadcasts and on-site lab activities per week. Schools may begin the course in the Fall or sign up for the second semester beginning in January. Hilary has taught the course for four years and has enrolled students from Missouri to Alaska.

For more information contact: Hilary Staatz, CMC, Kidder Hall 109, Oregon State University, Corvallis, OR 97331, 1/800/262-0391. Or visit: <http://www.orst.edu/instruction/oc199>

University Of Connecticut

In the fall of 1994, a diversity and citizenship distance education program was run in cooperation with the University of Connecticut. Two 7th grade classes, one from rural northeast Connecticut and one from an inner city in southwestern Connecticut met over interactive compressed video for three classes. They compared where they lived, discussed their differences and similarities, and how they might try to solve problems. The program ended with a field trip where each class came to the Capitol and met each other. The program generated much interest and enthusiasm from both schools and was considered a great success.

The program involved approximately 40 students; twenty from each school, and was structured to run over 4 sessions; 3 interactive video sessions and one face-to-face meeting. Each video session had a kind of lesson plan with specific exercises and objectives.

The first session was intended to introduce the students to the technology and to discuss the concept of thinking as a skill of responsible citizenship. For example, students were asked to explore the private and public reason that they go to school. The second session was intended to introduce listening and discussion as citizenship skills. One exercise was for students to write down five words that described themselves. Then the camera would focus in a particular student, and students on the far end would be asked to guess what the five describing words might be. The lesson here was to show that we really don't know people by just looking at them, we have to talk with and listen to them. In the last session, students were asked to look at their communities and communicate their public concerns. These were compared between

towns.

Teachers from each school accompanied their classes and helped to moderate the discussions. Teachers on both ends praised the program.

Financial support for this program came from private donations, as the program was not within the budgets for the schools. The total costs were under \$3,000; this included the video link-up, time "on the air" and support and transportation for each school to their respective video classrooms.

For more information please contact Professor Ed Sembor, Institute of Public Service, University of Connecticut, Box U-14, Storrs, CT 06269-4014. Or send email to: esembor@irismonarch.ced.uconn.edu

The University Of Florida Department Of Correspondence And Distance Education

The University of Florida Department of Correspondence and Distance Education offers more than 40 High School courses available through correspondence and six through email.

For more information visit: <http://www.doce.ufl.edu>

Se-Tv Is Digital Educational Television

SE-TV is a school-business collaboration between Hewlett-Packard Company, TCI Cablevision, Smart Valley, Inc. and the city of Sunnyvale, resulting in an educational television channel for Sunnyvale schools. SE-TV, on cable channel 28, provides video communication links between schools, students, and parents of the Sunnyvale community. SE-TV will broadcast educational programs, school plays, lectures, and even homework assignments to some 25,000 TCI customer homes in Sunnyvale without the need for any special computer equipment in the home.

HP has upgraded the channel capability with the donation of a digital HP Broadcast Video Server, making SE-TV the first station of any kind in the Bay Area to use this new digital video technology. HP's Broadcast Video Server is fully automated for time-delay programming, so the Sunnyvale schools will not need a full-time broadcast technician, an issue which had been an obstacle in the past. In addition to HP's contribution of the server, Starlight Networks of Mountain View, California donated its StarWorks multimedia networking software that helps to manage and store digital video for broadcast by the HP Broadcast Video Server.

As an addition to their Sunnyvale cable system, TCI Cablevision has donated a fiber optic link from the video studio at Vargas Elementary school to the cable head-end for cablecasting of Channel 28.

Channel 28 offers 24-hour programming, including TV shows created by students and faculty. Video production and cable technologies provide exciting ways to engage children who may not be getting the most out of traditional classroom activities. Knowing that their work will be widely viewed and will help to educate a real audience will inspire students to produce higher quality work.

SE-TV will also cablecast selected educational shows created by 22 different cable programmers, including Arts & Entertainment, The Discovery Channel, MTV, Nickelodeon, C-SPAN and The Learning Channel, among others.

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The University of Vermont

The University of Vermont's newly formed Distance Learning Network currently offers advanced placement courses to high school students in Vermont. These courses are taught via satellite; one way video, two way audio, from their on campus studio. Course receive sites are all currently in-state, but they are planning to expand coverage outside Vermont in the next year.

For more information visit: <http://uvmce.uvm.edu:443/dehappen.htm>

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