



By Samuel L. Dunn

The Virtualizing of Education

Education is an absolute imperative in the emerging global knowledge society, so new ways of providing access to education for a much higher percentage of the population are now being devised.

The most dramatic examples of access to education are found in the 11 distance-education mega-universities found around the world. In "distance education," the student is separated in time or space from the teacher or professor. The largest of these high enrollment universities is in China, the China Central Radio and Television University, with more than 3 million students. The English-speaking world has the British Open University, with 215,000 students, and the University of South Africa, with 120,000 students. In addition to the mega-universities, dozens of other national and regional systems are providing education at all levels to students. The Open University of Hong Kong, Universidade Aberta (Portugal), the Universidad Nacional de Educacion a Distancia (Spain), and the recently formed Western Governors University (United States) are just a few of those providing lower and/or higher education to needy citizenry.

Learning from Afar

The base delivery system for the distance-education mega-universities is television, supplemented by other technologies or even some on-site instruction in more-developed countries. Some distance-education

By 2025, traditional universities may be a thing of the past, replaced by consortia of course providers with delivery systems that simply bypass the classroom.

systems use two-way interactive video connections to particular locations where students gather; others supplement with the Internet, and still others deliver only by Internet. With video- and audio-streaming now available, the Internet appears to be the technology of choice for systems where students have access to computers. Of course, these technologies merely add to the radio-delivered courses that have been offered for years in many countries around the world.

The programs and courses offered vary from basic literacy courses to the highest graduate-level program-

ming. Hundreds of university degrees are now available through distance education, where 90% or more of the required credits are given at a distance, as are dozens of master's degrees and a small number of accredited doctoral degrees. One estimate suggests that 50,000 university-level courses are now available through distance-education delivery systems.

How will distance education affect traditional schools and universities? Primary and secondary schools have been a standard in most of the English-speaking world for at least a century. A large installed base of

higher-education institutions provides adult and postsecondary educational services to students. In the United States, there are more than 3,600 accredited institutions of higher education, about half public and half independent. In addition, there are about the same number of other kinds of schools, colleges, and

ety, but threatened they are.

Management theorist Peter Drucker has predicted that traditional universities as we know them will become a big wasteland in the next 25 years. The Association of Governing Boards predicts that one-third of the existing independent colleges and universities in the United States will close in

the next 10 years.

I predict that 10% of existing public colleges and 50% of independent colleges will close in the next 25 years. Almost all colleges will be radically reshaped by the digital revolution.

The Virtual Student Body

The shape of the future of higher education in North America and Europe is starting to be visible. One of the most important features is that boundaries of time and space are being eliminated. When students had to go to a particular location to access their educational programs, it made sense to talk about regional accreditation, tuition areas, service regions, and semesters. The new delivery systems antiquate these notions. With asynchronous delivery on the Internet, for example, the same course can be taken by a student in Hong Kong or Helsinki, Pretoria or Peoria. These changes in delivery will make it necessary

for students. Students will earn credits from many places and have the credits or certifications of completion sent to the certifying university, then that certifying university will award the degree when enough credits of the right type have been accumulated. Regent's College of the University of the State of New York and Thomas Edison College of New Jersey are public certifying institutions that give accredited degrees.

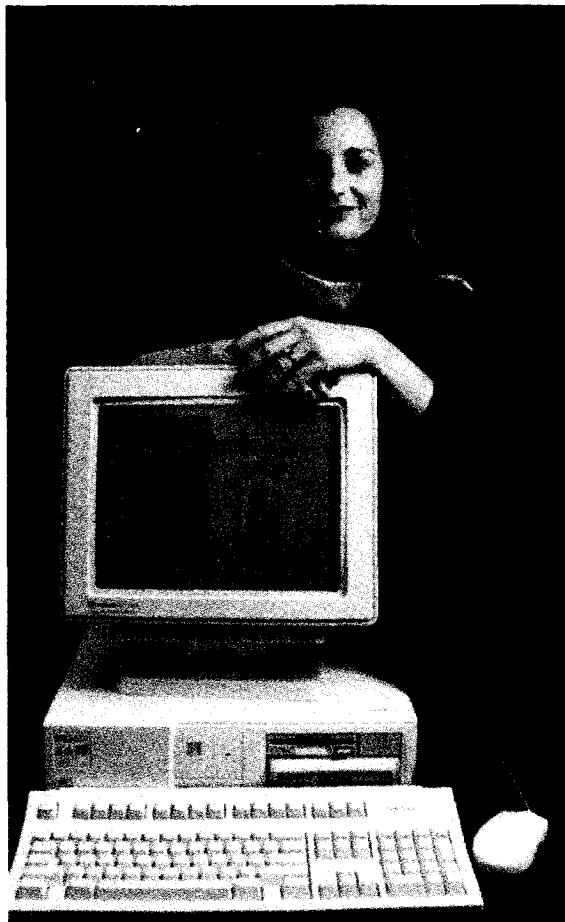
One vision for some of the remaining residential colleges in the United States, now serving mainly the 18- to 23-year-old population, is that many will become certifying colleges. Students will come to the colleges for their social, artistic, athletic, and spiritual programs. The basic commodity these colleges will sell is membership in the college community. Students will access their courses from colleges and universities around the world, transfer the credits to the college, then gain a degree. Faculty members will serve as tutors and advisers and may provide some courses live.

Most traditional colleges and universities already could be classified as certifying institutions. With more than 50% of all college graduates studying in more than one institution before graduating, most colleges readily accept the courses that are transferred in from other accredited institutions. In a majority of institutions, even now, a student has to take only one year of credits from that institution to get a degree.

The distinction between distance education and local education will become blurred. Almost all courses in the residential college of the future will be digitally enhanced. Because distance-education methodologies provide some advantages to student learning, those techniques will be incorporated into local teaching. By the year 2025, at least 95% of instruction in the United States will be digitally enhanced.

Digital courseware for most college-level courses will be available much sooner than 2025. Studies have shown that there are 25 college-level courses that get about 50% of the total credit enrollment across U.S. higher education. Among these are Introduction to Psychology, U.S. His-

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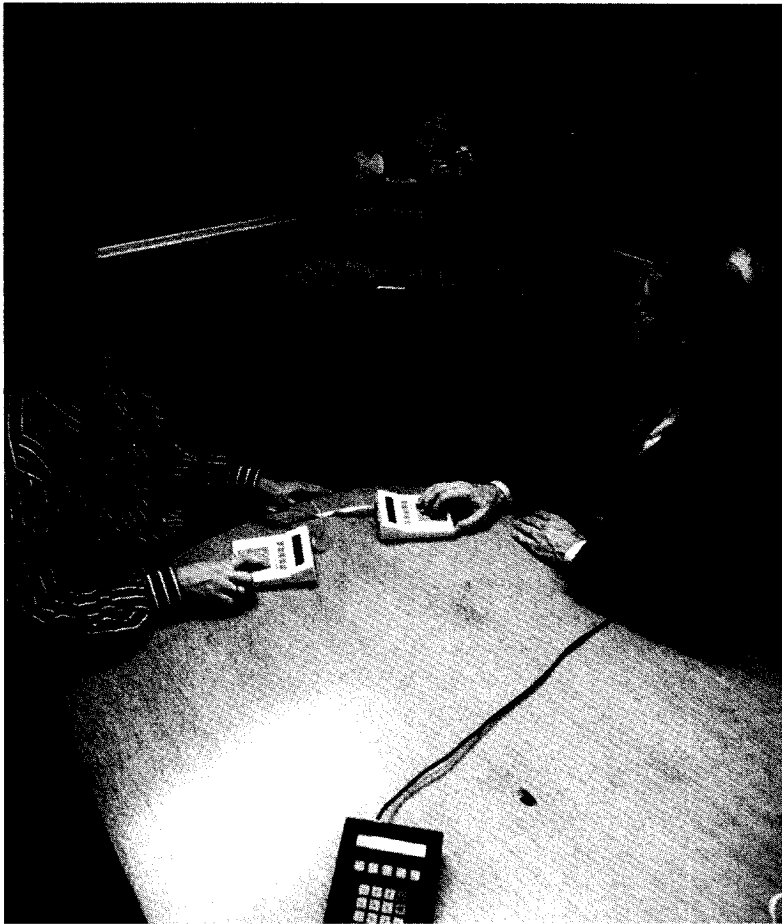


Virtual university graduate Patti Billett-Zigarevich, living in rural Colorado, earned a master's degree in business communication from Jones International University (www.international.edu) using the Internet and World Wide Web. More students will be pursuing degrees digitally, says author Samuel Dunn.

institutes that have access to federal funding for their students. The United Kingdom has approximately 120 recognized universities and hundreds of other educational institutions. It would seem that such a large installed base of traditional universities and schools would not be threatened by the new distribution channels of the knowledge soci-

ety to develop new ways of accrediting or approving courses and programs that students may receive from many parts of the world.

There will be two main types of educational institutions: those that add value in coursework and those that are certifying agencies. The certifying colleges and universities are those that act as educational bankers



One Touch Systems executives David Duignan (left) and Howard Green, in their Cupertino, California, offices, connect with a classroom in Barcelona. Businesses may become more directly involved in providing education products.

tory, Introduction to English Composition, Statistics, Introductory Spanish, and Calculus. There will be “killer applications” for these 25 courses available by 2010. These killer apps—so-called because of their quality, their comprehensive character, and their widespread usage—will be available for both distance and local usage. Courseware publishers will realize huge profits from these applications.

As we make the transition to the new world of education, thousands of organizations will develop their own digitized courseware, thus re-inventing the wheel over and over again. However, a general shakeout of courseware developers will leave a small number of courseware consortia and companies that will provide the bulk of courseware. These

groups will sell courses directly to students and license courseware to colleges and universities.

While the number of traditional educational institutions will go down, the number of providers of higher education will increase. The 7,000 current providers recognized by the U.S. Department of Education will grow to 10,000 by the year 2025. Publishers, corporations, for-profit and nonprofit entities will get into the education business, because there is big money to be made. Publishers will sell courses directly to students and thus eliminate the university middleman. The present 1,000 corporate universities will double by 2025.

Money is big in education. The United States alone spends \$600 billion on education of all types each

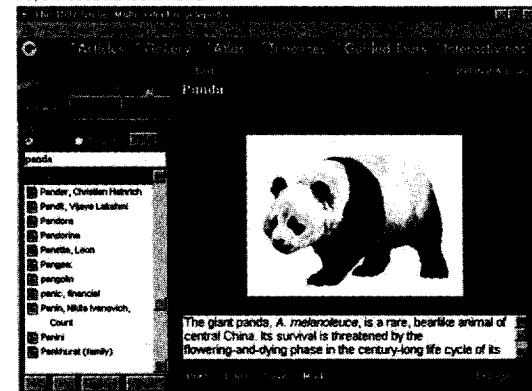
year, making it the second largest industry after health care. With estimates that the typical citizen will need the equivalent of 30 semester credits of coursework each 10 years to keep up with the changes that are coming, entrepreneurs see opportunities for large profits.

The need for continuing education is growing—a trend that will be compounded as the population base increases. The number of students needing traditional higher education in the United States is predicted to climb from the present 15 million to an estimated 20 million by the year 2010. Of the 6 billion people now on the globe, more than 1 billion are teenagers. It will be a gargantuan task to provide the education these people need to reap the benefits of the new world economy.

While entrepreneurs and for-profit organizations go after the profits available, governments will try to make education more efficient and save taxpayer dollars. Seamless education policies will make the transition from primary to secondary to higher education easier. Students will be encouraged to finish high school and college in six or seven years. States and provinces will provide financial incentives to institutions and directly to students to move through the system faster than normal.

Panda page from Grolier's Multimedia Encyclopedia, a CD-ROM reference tool allowing users to research material of interest at their own pace. The proliferation of educational products and services means that schools and universities are no longer the sole sources of knowledge and information.

HO, SAN JOSE MERCURY NEWS / KRT



16 Predictions for Higher Education

1 The number of degree-granting institutions will continue to grow, while the number of traditional campuses will decline. By 2025, half of today's existing independent colleges will be closed, merged, or significantly altered in mission.

2 University degrees and programs at all levels will be available by information technologies from all quality levels of educational institutions.

3 Courseware producers will sell courses and award credits directly to the end user and thus, through intermediation, bypass the institutional middleman.

4 There will be two principal types of degree and certificate-granting institutions: value-added and certification institutions.

5 The distinction between distance and local education will be blurred. Almost all courses will be digitally enhanced. There will be a small group of colleges that will carve out a market niche by maintaining "live faculty instruction" in their course delivery.

6 Seamless education between high school, undergraduate college, and graduate programs will be the norm. Incentives will be given to students and institu-

tions to move students through their programs at a fast rate.

7 The home-school movement will lead to a home-college movement.

8 The remaining campus-based colleges and universities will increasingly move to responsibility-center management and will outsource many functions now done by the institution.

9 Cities will expect colleges and universities to pay taxes or a "voluntary" equivalent for services rendered by the city.

10 The U.S. government will continue to certify institutions for access to student financial aid. By 2010, the number of eligible institutions will jump from about 7,000 at present to more than 10,000.

11 Faculty in traditional colleges and universities will revolt against technological delivery of courses and programs and against the emerging expectations for faculty. Unionization and strikes will increase as faculty fight a rear-guard action to try to slow down or stop the inevitable.

12 Accreditation and program approval will be based more on educational outcomes. Testing programs will be put in place by

discipline organizations, federal and state governments, corporations, and testing companies. Large corporations will develop their own approval systems. By 2025, there will not be one national accreditation system, although the U.S. Department of Education will provide a basic safety net for quality.

13 The big growth in adult and postsecondary education will be in degree and certificate programs for older adults. To be viable in the information society, the typical adult will need to take at least 30 semester credits every 10 years.

14 By 2005, there will be "killer" courseware applications covering the 25 college courses that enroll 50% of all credits.

15 Consortia of colleges, universities, and other kinds of institutions will increasingly band together to produce and deliver courses for students in their member institutions. Many of these consortia will seek their own accreditation and approval.

16 The distinctions between and among public and private, for-profit and nonprofit institutions of higher education will largely disappear.

—Samuel L. Dunn

The home-school movement will lead to the home-college movement. With the increased emphasis on educational outcomes, new systems of examinations and other assessment techniques will be made available to students who wish to study on their own. Certifying universities will provide the needed degrees and credentials.

Many independent colleges and universities will close, but there will still be a niche market for residential universities. Universities that provide a religious community or other

special programming for older adolescents will still be viable and desirable. To survive, and to attract students who are willing to pay the differential price, these institutions must provide high-quality special-interest programming for the niche. Much more than coursework must be available and delivered.

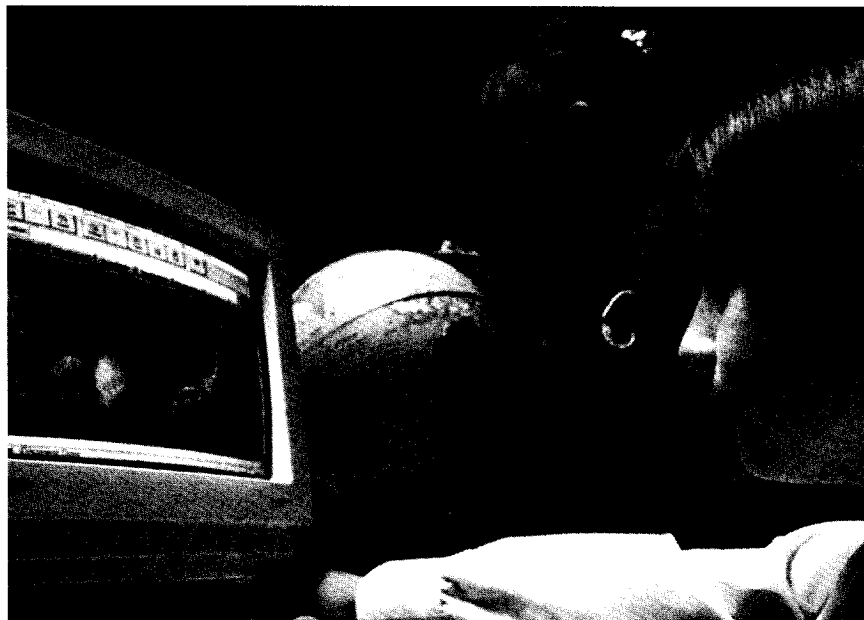
Networked Education

We are moving away from the factory university, a place-bound, product-oriented institution that provides educational services—teaching, re-

search, and service—to its clients at the time, place, and pace desired by the institution.

The virtual university is next—not a single institution, but a web of educational providers that collectively distribute services to the client at the time, place, pace, and style desired by the client, with quality determined by the client and a variety of approving and accrediting bodies. The virtual university has been born and is growing rapidly; it will be the predominant mode of higher education by the year 2025.

Schoolgirls in Sheffield, England, use the Internet to find information about Japan and to contact other children there. Schools are becoming increasingly digitally enhanced; the distinction between local and distance education will gradually disappear, says author Dunn.



While higher education will enjoy the most dramatic changes, primary and secondary education will change as well. These levels of instruction will be heavily digitized in the years ahead, although more emphasis will be given to moving students out of the home in order to benefit from socialization and enculturation with live teachers and classmates.

Alternatives to the public schools will continue to grow and be more popular. Television- and Internet-delivered courseware to support home schoolers is already being written and disseminated. Increasing demands for quality will be heard and responded to by public schools, church schools, and both nonprofit and for-profit entrepreneurs.

These are exciting days in education. Education is an absolute necessity for the knowledge society. Change is rapidly altering the face of educational delivery, but one thing is sure: The English-speaking world will continue to invest large portions of its resources to assuring an educated citizenry for the future. □



About the Author

Samuel L. Dunn is vice president for academic affairs and a professor of business and mathematics at Northwest Nazarene University, 623 Holly Street, Nampa, Idaho 83686. Telephone

1-208-467-8539; e-mail sldunn@exodus.nnu.edu. He is the author or co-author of several articles for *THE FUTURIST* and *Futures Research Quarterly* and a co-author of two books on religious futures.

Web Resources on Distance Education

www.usq.edu.au/dec/

DE: Distance Education is an international journal published by the University of Southern Queensland's Distance Education Centre, disseminating research and scholarship on distance-learning systems.

www.InterEd.com

InterEd provides research services to colleges and universities, independent training companies, corporations, and government agencies, including up-to-date information on online degree programs.

www.jonesinternational.edu

Jones International University is an accredited "cyberuniversity," granted regional accreditation by the North Central Association of Colleges and Schools.

www.lifelonglearning.com

LifeLongLearning is a database of distance learning courses, sponsored by Peterson's, a publisher of textbooks, software, and other education products.

www.lucent.com/cedl/about.html

Lucent Technologies Center for Excellence in Distance Learning builds partnerships with universities to provide distance-education services.

www.newpromise.com

NewPromise.com offers a comprehensive database of online education information, searchable by course content, school, and level of program desired.

www.open.ac.uk

The Open University, based in the United Kingdom, offers courses throughout Europe and around the world via partnerships and distance-learning opportunities. More than 40,000 of its 200,000 students study online.

www.regents.edu

Regents College, "America's First Virtual University," based in Albany, New York. Offers accredited associate and baccalaureate degrees in business, liberal arts, nursing, and technology. Currently enrolls 17,000 distance learners.