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ABSTRACT

The Institute for Higher Education Policy reviewed the research on quality and equality in Internet-based higher education and found a relative paucity of original research dedicated to explaining or predicting phenomena related to distance learning. The research that does exist has tended to emphasize student outcomes for individual courses, rather than a whole academic program. The research does not address the question of dropout rates or how learning styles relate to the use of particular technologies. The research does not include a theoretical or conceptual framework, nor does it consider the effectiveness of "digital libraries." The Institute developed benchmarks for Internet-based distance learning drawing on the limited research available and a case study that consisted of three sequential phases: a literature review, the identification of institutions with experience in Internet-based distance education, and a survey of six such institutions. The outcome was a list of 24 benchmarks, attached to this document as an appendix. The development of this list of benchmarks has resulted in the formulation of three recommendations for Internet-based distance education: (1) proceed cautiously with efforts to apply a governmental imprimatur on Web-based higher education; (2) find ways to strengthen the impact technology may have on equal educational opportunity, especially institutions that serve large numbers of underrepresented students; and (3) ground government policies in standards of quality that are based on what works, such as the proposed benchmarks. (SLD)

Teaching and Organization of Studies in the Virtual and Classical University: Conflict and/or Mutual Reinforcement

International Seminar organized by the UNESCO European Centre for Higher Education (UNESCO-CEPES) and the University of Puerto Rico in collaboration with the Puerto Rico Council on Higher Education and the Hispanic Educational Telecommunications System

QUALITY AND EQUALITY IN INTERNET-BASED HIGHER EDUCATION: BENCHMARKS FOR SUCCESS

Closing Keynote Address

24 October, 2001

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Distinguished Colleagues:

I am delighted to be here with you on this important occasion. For those of you who may not know our work, the Institute for Higher Education Policy is an independent policy research and consulting NGO whose main focus is access and opportunity in higher education. This work has been primarily in the context of U.S. higher education, though increasingly the Institute has had the opportunity to work on governmental and institutional policy development in several nations, including South Africa, Mozambique, Russia, Kyrgyzstan, and others. We also are proud contributors to policy development here in Puerto Rico, having served as an analytic resource to the Puerto Rico Council on Higher Education for several years.

The Institute was founded in 1993 to address what continues to be a fundamental paradox of American higher education; namely, that as participation in higher education has increased in the last 30 years, the overall status of historically disadvantaged populations has not significantly improved, and may even have gotten worse. Today, nearly 70% of high school graduates go on to college, but this very impressive statistic masks the fact that the college participation gap between low- and high-income students, and between whites and other racial and ethnic groups in the U.S., has remained almost exactly what it was in the early 1970s—30 percentage points. Since non-whites are the fastest growing segment of the American population, and given the growing disparities between low- and high-income populations, the failure to close that gap means that low-income individuals and people of color are actually losing ground, a fact that has very real consequences for our overall economic and social growth and stability.

The Institute publishes more than a dozen reports per year on a range of issues, including financing of higher education, quality assurance, demographic trends, minority-serving colleges and universities, and other issues. Technology, and its overall impact on educational opportunity and quality, has been one of our foremost concerns. As the convening of this important meeting attests, technology is affecting higher education on many levels—ranging from scientific equipment to financing structures to university

administrative systems. But the place where technology is likely to have the biggest impact over the long-term is in the teaching and learning context. Today, one half of all college courses in the U.S. use the Internet in some way as a part of the educational process, including class web pages, e-mail discussion groups, etc., and nearly one out of every 10 American college students takes at least one distance education course in the course of obtaining their degree—particularly one- and two-way interactive video, and online courses, which is where most of the growth is now taking place. The Institute's work in this area is focused on understanding how technology is changing postsecondary education, and what that means for student equity and overall standards of quality. My perspectives on issues related to the quality and equality of Internet-based higher education are largely drawn from my experiences with this method of higher education delivery in the U.S., though I am convinced from our work in other nations that many of the principles and findings that I will discuss today are applicable in many national and cross-national contexts.

Two of our recent studies have been discussed widely in the higher education community in the last two years, and provide a useful starting point for my remarks. The first, entitled *What's the Difference? A Review of Contemporary Research on the Effectiveness of Distance Learning in Higher Education,* was intended to shed some light on the question of the differences in educational outcomes between distance learning and traditional classroom-based instruction. (A copy of the full report can be found on the Institute's website at www.ihep.org.) In our prior work in U.S. higher education policy, we had observed that a growing number of policymakers (particularly in states where higher education enrollments are projected to surge in the next decade, such as in the West) were pronouncing the end of new campus construction in favor of distance-based instruction. These pronouncements seemed to be based primarily on the belief that the outcomes of distance-based and traditional classroom-based instruction are indistinguishable—that there is no significant difference between the outcomes of distance versus traditional classroom-based learning.

To help answer this question, we decided to assess the available evidence by reviewing what has been published about the issue in recent years. Because of the constantly evolving nature of the technology and its uses, we limited the scope of our review to material published during the 1990s. This still left us with the task of reviewing several hundred articles, papers, and dissertations. It turned out that most of what is written about distance learning is opinion pieces, how-to articles, and second-hand reports that do not involve actual research on the students or faculty involved with distance learning. We therefore focused our inquiry only on those items and case studies that contained original research, in the hope that they would provide enough evidence to assess the differences between distance and classroom-based teaching. What we found was that despite the large volume of written material concentrating on distance learning, there is a relative paucity of original research dedicated to explaining or predicting phenomena related to distance learning.

Our critique of the quality of the research made four simple points. First, much of the research does not control for extraneous variables and therefore cannot show cause and effect. Second, most of the studies do not use randomly selected subjects; many of the published studies reviewed used intact groups (such as an entire class of students) for comparison purposes. Third, the validity and reliability of the instruments used to measure student outcomes and attitudes, such as questionnaires and surveys, are questionable. And fourth, 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"—which can sometimes skew the findings by providing short-term or temporary benefits that are not sustained over the span of the educational program.

In addition to these general weaknesses in the quality of the research, the report found that the research did not address several significant issues regarding the effectiveness of distance learning. These gaps must be filled so that the public policy discussions about distance education can be based on accurate and adequate information. Examples of these gaps include:

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. This raises serious questions about whether a total academic program delivered by technology compares favorably with a program provided on-campus—an important distinction given that government policies and programs, such as student aid, typically are aimed at providing access to degrees or a program of study, not just single courses.

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."

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

Our understanding of how the learner, the learning task, and a particular technology interact is limited. Learner characteristics, such as gender, age, and educational experience, are a major factor in the achievement and satisfaction levels of the distance learner. Information regarding a student's preferred learning style—for example, how he or she processes information—will influence how the course is designed and what type of technology is used. Additional research could result in more information about why different technologies might be better suited for specific learning tasks.

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.

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 and full-text of a variety of resources. 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, journals, and other resources available from the digital library.

The report generated considerable dialogue throughout academia about what constitutes quality in distance learning settings. It also pointed out areas for more research, including how, and in what ways, technology can enhance the teaching/learning process. Last year, the Institute decided to follow-up *What's the Difference?* with another study. Given the first report's major conclusions, we decided to contribute to the research by looking at some fundamental benchmarks of quality in Internet-based distance education programs by conducting case studies of actual programs. We recognized that such a study inherently would include some of the very limitations noted in *What's the Difference*, but we were convinced that such research can help build a foundation for future analyses capable of refining or expanding upon the lessons learned from the institutions studied. That study, entitled, *Quality On the Line: Benchmarks for Success in Internet-based Distance Education*, has generated a flurry of interest from higher education leaders in many countries. In fact, *Quality On the Line* has been downloaded more than 100,000 times from the Institute's website since its release last year—a testament to the enormous interest that this topic now generates across the globe.

The extraordinary growth of technology-mediated distance learning in higher education has prompted several different U.S.-based organizations to develop principles, guidelines, or benchmarks to ensure quality distance education. These organizations include the American Council on Education, the Global Alliance for Transnational Education, the

National Education Association, and the Southern Regional Electronic Campus, among others. The quality assurance benchmarks promoted by these organizations are designed to apply to a wide variety of institutional contexts and consist of fairly broad statements. Virtually all of the strategies address such topics as course development, faculty training, student services, learning resources, infrastructure, and outcomes assessment.

These benchmarks for all types of distance learning have been in existence in various forms for a number of years. The question that has arisen is whether they are applicable to *Internet-based* distance education. In short, are the benchmarks appropriate and necessary to ensure quality Internet-based distance education? Two organizations—the National Education Association and Blackboard, Inc., a widely used platform provider for online distance education—jointly commissioned the Institute to examine the benchmarks by studying active distance learning programs at several institutions.

Specifically, the project sponsors asked the Institute to attempt to validate those benchmarks that have been published by various entities, with specific attention to Internet-based distance education. The study was designed to ascertain the degree to which the benchmarks are actually incorporated in the policies, procedures, and practices of colleges and universities that are distance education leaders. In addition, this case study sought to determine *how important* the benchmarks are to the institutions, including faculty, administrators, and students.

The case study process consisted of three sequential phases. First, a comprehensive literature search was conducted to compile those benchmarks recommended by other organizations and groups, as well as those suggested in various articles and publications. This search resulted in a total of 45 benchmarks developed by these other organizations.

Second, institutions were identified that satisfied the following criteria. The institutions must (1) have substantial experience in distance education; (2) be recognized as among the leaders in Internet-based distance education; (3) be regionally accredited; and (4) offer more than one degree program via online distance learning. To ensure that a broad

spectrum of higher education institutions were represented, the study included a community college, a comprehensive institution, a research institution, and a virtual institution. From among several colleges and universities that fit the requirements, the following six institutions agreed to participate in the study: Brevard Community College in Florida, Regents College in New York, the University of Illinois at Urbana-Champaign, the University of Maryland University College, Utah State University, and Weber State University in Utah.

Third, the six institutions were visited by Institute staff to assess the degree to which the campuses incorporated the benchmarks in their Internet-based distance learning courses and programs. Each site visit included interviews with faculty, administrators, and students, as well as a survey of these individuals that rated both the presence and importance of the original group of 45 benchmarks to determine if they are being followed and if they make a difference in terms of academic quality.

The results of the study revealed that, for the most part, the benchmarks for quality Internet-based distance education were considered important and, in general, the institutions strove to incorporate them into their policies, practices, and procedures. At the same time, several benchmarks did not enjoy consensus among administrators, faculty, and students at the institutions and, in some instances, were not considered mandatory to ensure quality in distance education.

The final outcome was a list of 24 benchmarks that are essential to ensure quality in Internet-based distance education (see Appendix). Stated differently, *the absence of the benchmark would be deleterious to quality.* The purpose of the study was to assist policymakers—college and university presidents and chief academic officers, state coordinating boards, accrediting bodies, state legislatures, and governors' offices—as well as faculty and students, make reasonable judgments with regard to quality Internet-based distance education. The challenge, then, was to identify those benchmarks that are essential for quality distance education—in contrast to those benchmarks that contribute to and support the teaching/learning process, but are not necessary or required to ensure quality.

While we certainly don't believe this is a definitive list, we are confident that policymakers can use this list with the assurance that they are directly addressing the issue of quality without placing unnecessary restrictions on institutions of higher education.

Recommendations

The completion of this second study has in turn highlighted other issues that merit further consideration, including how to define student success in distance-based education and what measures should be used. We also have begun to explore the important issues related to financing technology in higher education, and earlier this year published a primer on the topic entitled *Funding the Infostructure*. We hope to continue to explore these and other questions in the next few years.

As you move ahead with your important work as global leaders in higher education and information technology, I hope you will take into account the lessons we and other analysts have learned from research regarding Internet-based higher education in the United States. Specifically, I would urge you to consider the following three recommendations, all grounded in our work:

1) ***Proceed cautiously with efforts to apply a governmental imprimatur on web-based higher education.***

Web-based education holds great promise as a tool for improving both the scope and effectiveness of higher education. But as with other educational innovations that have come before it, there is some danger that the innovations made possible through the Internet are advancing more rapidly than our understanding of its practical uses. Princeton historian Robert Darnton makes this point in an essay about electronic publishing published in the March 18, 1999 issue of the *New York Review of Books*. Darnton observes that, since its inception, electronic publishing has passed through three stages: "an initial phase of utopian enthusiasm, a period of disillusionment, and a new tendency toward pragmatism." In the context of higher education, more emphasis has been placed on the "utopian" possibilities of the technology and its potential to transform teaching and learning. But not enough "pragmatism" has been applied to

allow for a discussion of technology's practical implications—and limitations—as a supplement to enhance teaching and learning. Getting at those pragmatic and ultimately crucial questions is what all those with an interest in higher education's future should make as their common goal.

I would be particularly concerned about attempts to make dramatic changes to funding systems in the absence of reliable and definitive information about how such resources would be used, and for what purposes. A good example is an area that I have spent a great deal of my time studying professionally—student financial aid. Internet-based distance learning certainly will challenge our concepts and assumptions in student aid delivery. But it is critical to recognize that distance learning and traditional classroom based instruction are integrally linked, and not wholly disparate in their goals or techniques. While the methods of teaching and learning that are possible as a result of the Internet certainly have the capacity to transform our educational systems and processes, we should not view them as separate from traditional higher education. On the contrary, what happens in one should be viewed as having very real implications for the other.

Focusing on ways to enhance student aid to assure that its principle goal of providing access to college is a worthy endeavor, especially for public policy. Yet in so doing, we must be certain that our decisions are based on the desire to make college possible for all who have the interest and skills, and not to favor any particular mode of delivery. Access to quality higher education opportunities must continue to be the most important and enduring consideration of student aid systems. If the Internet can offer greater focus on that goal, then it certainly could help to bridge the gap in educational opportunities still present in many societies. But bending the system to favor any one particular mode of delivery will only further erode the essential purposes for which need-based aid programs were created. We must not allow our enthusiasm for, or fear of, the technology to impede progress in making the goal of equal educational opportunity a reality.

2) ***Find ways to strengthen the impact that technology may have on equal educational opportunity, and particularly on institutions of higher education that serve large numbers of underrepresented students.***

Numerous reports and studies in the U.S., Africa, Europe, and other parts of the world have observed that the demographic compositions of the technologically disenfranchised are overwhelmingly ethnic minorities, the poor, and residents of non-urban areas. Combined with other indices relative to these populations, such as unemployment and adult illiteracy, these groups will continue to be alienated from the technology resources of the public and private sectors unless interventions are introduced.

Some efforts are underway to help build the technology infrastructure to serve disadvantaged communities, ranging from the important accomplishments of the Maori universities in New Zealand to the groundbreaking work of the African Virtual University. In the U.S., modest investments have been made in addressing the technology deficits that exist at Minority-Serving Institutions (MSIs) of higher education—Historically and Predominantly Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), and Tribal Colleges and Universities. For example, the National Science Foundation is investing $6 million over four years to improve the Internet connections at a select group of these minority-serving institutions. Recently proposed national legislation, as yet unfunded, would add another $250 million in resources to support the technology infrastructure at these institutions.

However, providing access to the Internet is a necessary but not sufficient component of making institutions that serve disadvantaged populations viable players in the online learning community. Maximizing technology's effectiveness requires well-trained and supported faculty who can use the Internet as a major component of the teaching and learning process. Government policy needs to be certain that these institutions, and the students they serve, are not left behind by the Internet explosion. Making sufficient resources available for how to use technology is equally as important as investment in

the technology infrastructure. Specific funding could be targeted at faculty training for teaching online, as well as broader training efforts for students and faculty in web-based teaching and research methods.

3) ***Ground government policies in standards of quality that are based on what works—such as the benchmarks that have been proposed.***

This really requires no further explanation beyond what I have described, except to emphasize that access to poor quality higher education really is not equalizing educational opportunity. Given the historic and continuing role of governments in fostering equal opportunity, it is critical to ensure that such access is to the highest quality programs possible—irrespective of whether it is classroom-based, Internet-based, or any other type of delivery mechanism.

In closing, I would observe that the work that we have engaged in at this meeting is significant, timely, and ultimately could have long-term implications for the important role that higher education plays in the economic and social growth and stability of nations across the globe. Thank you very much for the opportunity to be with you at this important conference, and to share these thoughts on the implications of Internet-based higher education on educational quality and equality.

APPENDIX

Benchmarks for Success in Internet-based Distance Education

Institutional Support Benchmarks

$ A documented technology plan that includes electronic security measures (i.e., password protection, encryption, back-up systems) is in place and operational to ensure both quality standards and the integrity and validity of information.

$ The reliability of the technology delivery system is as failsafe as possible.

$ A centralized system provides support for building and maintaining the distance education infrastructure.

Course Development Benchmarks

$ Guidelines regarding minimum standards are used for course development, design, and delivery, while learning outcomes—not the availability of existing technology—determine the technology being used to deliver course content.

$ Instructional materials are reviewed periodically to ensure they meet program standards.

$ Courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their course and program requirements.

Teaching/Learning Benchmarks

$ Student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail.

$ Feedback to student assignments and questions is constructive and provided in a timely manner.

$ Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

Course Structure Benchmarks

$ Before starting an online program, students are advised about the program to determine (1) if they possess the self-motivation and commitment to learn at a distance and (2) if they have access to the minimal technology required by the course design.

$ Students are provided with supplemental course information that outlines course objectives, concepts, and ideas, and learning outcomes for each course are summarized in a clearly written, straightforward statement.

$ Students have access to sufficient library resources that may include a "virtual library" accessible through the World Wide Web.

$ Faculty and students agree upon expectations regarding times for student assignment completion and faculty response.

Student Support Benchmarks

$ Students receive information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.

$ Students are provided with hands-on training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services, and other sources.

$ Throughout the duration of the course/program, students have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.

$ Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

Faculty Support Benchmarks

$ Technical assistance in course development is available to faculty, who are encouraged to use it.

$ Faculty members are assisted in the transition from classroom teaching to online instruction and are assessed during the process.

$ Instructor training and assistance, including peer mentoring, continues through the progression of the online course.

$ Faculty members are provided with written resources to deal with issues arising from student use of electronically-accessed data.

Evaluation and Assessment Benchmarks

- $ The program's educational effectiveness and teaching/learning process is assessed through an evaluation process that uses several methods and applies specific standards.

- $ Data on enrollment, costs, and successful/innovative uses of technology are used to evaluate program effectiveness.

- $ Intended learning outcomes are reviewed regularly to ensure clarity, utility, and appropriateness.

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