Assuring Quality in Distance Learning

A Preliminary Review

A report prepared for the

Council for Higher Education Accreditation

by The Institute for Higher Education Policy

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The Council for Higher Education Accreditation (CHEA) is a private, nonprofit national organization that coordinates accreditation activity in the United States. CHEA represents more than 3,000 colleges and universities and 60 national, regional, and specialized accreditors.

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Executive Summary

The Council for Higher Education Accreditation (CHEA) commissioned The Institute for Higher Education Policy to investigate the emerging topic of quality assurance in technology-mediated distance learning programs in higher education. Distance learning is growing rapidly, not only as a supplement to traditional institutions and programs, but also as a replacement for those institutions and programs. Policymakers at both the federal and state level are displaying a keen interest in developing a level playing field in public policies affecting distance and campus-based higher education. Further, distance learning is seen by many as a transformative vehicle for increasing the pace of change and reform in higher education. For these and other reasons, analysis of quality assurance is an essential topic for national, state, and institutional policy development.

This study drew upon information from a variety of sources: a review of the literature on distance learning, visits to distance learning sites and providers, and interviews with distance learning experts. This report presents the most up-to-date information available, with the caveat that the context for distance learning is continually changing and evolving.

Our inquiry has been framed by several interrelated phenomena that have accompanied the rapid growth of information technology. These technological and cultural catalysts are pervasive and transcend the various characteristics of providers of postsecondary education. They are:

The emergence of lifelong learning, which is becoming the norm that is augmenting, and in some cases displacing, school-age education. People of all ages participating in learning are the impetus for the creation of new providers well beyond the traditional educational establishment, expanding not only who gets educated, but by whom.

Efforts to make instruction more learner-centered, which is characterized by three fundamental qualities: instruction is largely self-directed; it is more focused and purposeful; and it employs the appropriate level of faculty mediation.

The desire to provide access irrespective of where a student lives, which embraces the notion that learning does not only have to take place on a college or university campus. A number of courses and academic programs already are being provided to students in venues away from the campus.

The development of "knowledge media," which describes the convergence of telecommunications, computing, and the learning or cognitive sciences, and includes the capturing, storing, imparting, sharing, accessing, and creation of knowledge. Knowledge media provide the opportunity to change the emphasis from the classroom and teaching to the individual and learning.

With this backdrop, the study has attempted to answer the following questions:

- What is the universe of technology-mediated distance learning at the postsecondary education level, and how can the array of learning offerings in this country be categorized and described?

- What are the existing or emerging strategies for quality assurance of technology-mediated distance learning programs?

- How can the educational outcomes and experiences offered by these programs and institutions be measured?

- What specific policies and procedures are required for providing quality assurance of technology-mediated distance learning?

For the purposes of this paper, we define "quality assurance" in distance learning as the means by which the institutions or providers set their program goals and measure results against those goals. The process reviews academic content, pedagogic techniques, resources, and support services to see how they combine to enhance the learning environment and ensure student academic achievement.

What is the universe of technology-mediated distance learning at the postsecondary education level, and how can the array of learning offerings in this country be categorized and described?

There are essentially four types of distance learning providers: the military services; corporate universities; unaffiliated distance learning providers; and postsecondary providers.

The Military Services. The U.S. Army is embarking on the most ambitious undertaking of all of the armed services, dedicating $840 million over a 13-year period to provide global access to training through distance learning. The goal is to use distance learning methods to improve efficiency and effectiveness of military training. Using the full range of technology options, the Army intends to design 35 courses during FY 1998 and develop a total of 535 courses by FY 2003, in addition to building 204 facilities and 745 classrooms.

Corporate Universities. A large application of distance learning today is employee training. In 1995, over $50 billion was spent on training by employers. Though estimates suggest that as many as 1,000 corporate universities exist, the extent to which the corporate sector is using distance learning is difficult to ascertain. Most corporate universities share two common goals: to train all of their employeesónot just their professional managersóand to view training as a way to inculcate key stakeholders in the vision, traditions, and culture of the organization.

Unaffiliated Distance Learner Providers. A variety of learning activities are available, primarily through the Internet, that are not associated with any postsecondary institution. The major difference between these unaffiliated learning activities and other kinds of distance learning is that they are not credit-bearing, degree, or credentialing programs.

Postsecondary Providers. Both collegiate higher education institutions, as well as other entities, provide instruction to degree- or credential-seeking students through learning activities that are typically organized in courses for some form of academic credit. According to a Fall 1995 National Center for Education Statistics survey, a significant number of institutions are attempting to address distance learning. Thirty-three percent of higher education institutions offered distance education courses and another 25 percent planned to offer such courses in the next three years. Twenty-three percent of the institutions that offered distance education courses offered degrees that students could complete by taking distance

education courses exclusively. An estimated 753,640 students enrolled in distance education courses in academic year 1994-95.

A key to understanding the organizational structures and approaches used by postsecondary providers in distance learning is to distinguish between the different types of postsecondary providers, both in terms of who provides the education and who awards the degree or certificate. When different organizational arrangements are sorted in this way, there appear to be four basic patterns:

Enhancements to Traditional Campus-Based Instruction. The vast majority of institutions offering distance learning are traditional colleges and universities with on-campus students who also offer some courses and entire programs of study at a distance. Technology-assisted instruction is both a pedagogical enhancement to the regular curriculum and a way to facilitate access to students who either cannot or choose not to enroll in traditional classes. More and more faculty are setting up websites to supplement their courses, including chat rooms for student study halls, and e-mail communication between students and faculty. Students who receive instruction via these means are regularly matriculated, enrolled in the usual courses, taught by the same faculty, and stay on campus most of the time they are studying. The instruction can be offered through off-campus centers as well as on-campus.

Consortia or Collaboratives. Consortia or collaboratives are cooperative pooling and sharing arrangements among institutions, where several colleges and universities join together through a statewide or regional network to offer distance learning programs. The authority to award the degree or credits is retained by the institutions and does not shift to the "cooperative" or consortium. Examples include the Education Network of Maine and the Southern Regional Electronic Campus.

Contracted or Brokered Arrangements. Contracted or brokered arrangements are configurations of institutions, faculty, or other providers brought together solely for the purpose of delivering distance learning. In contrast to consortia or collaboratives, in contracted arrangements the degree or certificate authority rests with the contracting or organizing entity, not with the originating institution. Examples of major types of contracted arrangements include Governors State University and the National Technological University.

Virtual Universities. These institutions offer most or all of their instruction via technological means. A variety of teaching and learning styles and delivery mechanisms are provided, but what binds them together is their heavy or exclusive use of technology as the educational delivery device. The British Open University, Western Governors University, and International University are good examples of these types of institutions.

What are the existing or emerging strategies for quality assurance of technology-mediated distance learning programs?

Quality assurance strategies appear to be integrated into the design of most postsecondary education distance learning programs. These strategies look quite similar to those in traditional institutions and programs, focusing on the following four key aspects of quality assurance:

Faculty Credentials, Selection, and Training. Quality assurance in many programs and institutions focuses heavily on review of faculty credentials, selection procedures for new faculty, and faculty training. Often,

candidates for a faculty position are required to engage in an intensive training program that includes conducting a mini-lesson, interviewing with current faculty, and being assigned a mentor. In addition to possessing a graduate degree relevant to the field of instruction, faculty are expected to understand the role of technology in a learning environment, be trained in online teaching concepts, and use assessment techniques appropriately.

Time-on-Task Measures. Focus on time-on-task measures, including minimum weeks for courses and monitoring of course "log-ins," is common in distance learning programs. In addition to textbooks, many courses are accompanied by a comprehensive study guide which provides course objectives and key concepts. Students are expected to spend a minimum amount of time per week for study and homework assignments. Interaction with faculty is mandated and, in many cases, students share access to a class group mailbox along with the instructor, which provides a platform for instructor communication at virtually any time.

Student Support Services and Consumer Information. Several of the distance learning providers conduct what appear to be rigorous reviews of student support services as one element of quality control. In fact, focus on adequate student support as an essential element of teaching and learning may be one of the most distinctive features of quality control in distance learning environments.

Goals and Outcomes. Quality assurance in distance learning is distinguished by a strong emphasis on program goals, and assessment of results or outcomes in the context of these goals. The focus on assessment of goals and outcomes does not necessarily mean that distance learning programs have been path-breakers in devising new ways to measure instructional outcomes; in fact, with few exceptions we found that distance learning providers measure learning results in much the same way as do conventional programs.

Comparing "Conventional" and Distance Learning Quality Assurance Strategies

Quality assurance strategies for distance learning tend to be oriented toward institutional assessment activities, and to affirming that the core capacities to assure quality—such as faculty credentials and student support services—are in place. Thus, the review is of resources and inputs more than educational value-added, making it similar to quality assurance in traditional higher education.

What seems to be most strikingly different is the process for quality review in distance learning programs. In distance learning programs we found a greater tendency for the assessment process to be led by the administration instead of the faculty, with greater use of outside consultants and assessment "experts" in lieu of internally-generated peer reviews. The quality assurance process therefore appears to be less process-driven, where there is a high value placed on consultation, consensus building and dialogue, and more oriented to "bottom-line" or market-oriented results.

In sum, the major differences between the kinds of institutional characteristics that are typical of most conventional collegiate institutions and those of distance learning programs are:

Difference in Mission and Focus. The major stated commitment in distance learning is to the teaching/learning process, and there is a sharper focus on that as an exclusive goal.

Focus on Client. The student is regarded first as a client of the organization, and the educational activities

that the client desires predominate in the design and implementation of programs.

Less Control by Faculty over Curriculum. The tendency to develop or use pre-packaged courses and the preponderance of part-time faculty are characteristics of many distance learning programs.

Less Emphasis on Process. The conventional academic culture relies heavily on process, is substantially consultative, and is consensus-driven. The delivery of distance education programs tends to abandon, at least partially, these traditional quality assurance activities, and appears to be more assessment-driven.

Contracting for Services. Many distance learning programs contract with other entities to provide those administrative and student services not directly related to the teaching/learning process.

How can the educational outcomes and experiences offered by these programs and institutions be measured?

The measurement of educational outcomes and experiences in distance learning is elusive. With few exceptions, we found little evidence to indicate that student learning outcomes are emphasized more heavily in the vast majority of distance learning settings than in the more traditional institution environments. However, some of the more prominent providers are attempting to inject more of a student learning outcomes focus into their overall delivery systems. For example, the University of Phoenix has established comprehensive cognitive and affective assessment systems for working adults. Motorola University employs a process where students are assessed one and three months after completion of a course to determine their retention of the crucial knowledge and skills. Perhaps more importantly, managers expect performance to improve as a direct result of the learning activities. The Western Governors University has developed a system where quality control requires the successful completion of an externally administered, criterion-referenced assessment instrument for awarding certificates and degrees. Although WGU will authorize certain providers to supply academic content, the process by which the student acquires the necessary knowledge and skills is secondary.

What specific policies and procedures are required for providing quality assurance of technology-mediated distance learning?

To aid in the development of a policy and research agenda, we conclude with some suggestions for next steps, including a policy agenda for academic accreditation, options for federal policy development, and topics requiring additional research and analysis.

A Policy Agenda for Academic Accreditation

The accreditation model remains a viable and effective means for public quality assurance in distance learning. The research conducted for this paper shows that the core processes of setting and measuring standards can work effectively in distance learning settings. Yet accreditation is challenged by distance learning to adapt standards that are rigorous, to be prepared to re-evaluate traditional processes, to be open to alternatives, and to provide public evidence of measures of performance against the standards. It

also must engage in public discussion about fundamental questions regarding the purpose and values of higher education, particularly in degree-granting collegiate programs.

We believe there are central threshold questions which relate to basic collegiate values and purposes that accreditors must confront because of the prevalence of distance learning. These questions concern the role of faculty and the degree of professional autonomy and academic freedom they have within the institution. They also concern minimum expectations for student involvement in an intellectual community, and the prominence of acculturation, personal skills, and values development as central qualities of higher education. To answer these questions requires a fresh look at both the design and control of the curriculum, and the core purposes of collegiate higher education in society.

In addition to posing these threshold questions, we offer the following specific recommendations for steps that need to be undertaken by the accreditation community:

- Establish reliable and valid performance measurements for distance learning;
- Require providers to substantiate evidence of contact between faculty and students;
- Require evidence of effective instructional techniques;
- Promote systematic efforts for selecting and training faculty;
- Assure the availability of learning resources;
- Promote ongoing monitoring and enhancement of the technology infrastructure of institutions;
- Focus attention on the development of courseware and the availability of information; and
- Examine alternatives to the traditional accreditation process.

Options for Federal Policy Development

There are a number of issues in the current federal standards that appear to be particularly problematic for distance learning, including: the definition of ìsites,î ìbranch campuses,î and ìlocationsî; standards for administrative capacity; the requirement that student credit is recorded either in credit hours or clock hours; the measurement of student financial need; and a host of other concerns.

It is easier to identify the regulatory barriers to distance learning than to know how they should be rewritten in a way that does not invite a new spate of fraud in the aid programs. If enough is not known about how to rework these provisions to accommodate distance learning providers, without inviting new opportunities for fraud, all of the aid programs could become vulnerable. An alternative that might solve the problem would be to create a new definition of a ìdistance learningî institution in the law, and amend the ìexperimental sitesî provision in the law to extend Title IV eligibility to distance learning institutions that are accredited by a recognized accreditor but fail to meet federal institutional eligibility standards. The experimental sites provision also would allow monitoring and research to be done so that more appropriate standards can be written in the future.

Issues for Further Research and Analysis

Key questions requiring further research and analysis include:

- What are the demographic characteristics of students now being served by distance learning programs, and how does this compare to student characteristics for conventional programs?
- What can we generalize about the matriculation, enrollment, and patterns of learning progression for students in distance learning?
- Who designs the curriculum and course materials in distance learning programs?
- What tuition or fees do students pay for distance learning programs? What percentage of total institutional revenues come from tuition or fee sources?
- Can distance learning be provided at the same or lower cost than conventional education?
- Is there greater capacity to measure student learning outcomes in distance learning programs, and if so, how are learning goals set and measured?

Introduction

This report has been commissioned by the Council for Higher Education Accreditation (CHEA) to investigate the emerging topic of quality assurance in technology-mediated distance learning programs in higher education. Our inquiry attempted to answer the following questions:

- What is the universe of technology-mediated distance learning at the postsecondary education level, and how can the array of learning offerings in this country be categorized and described?
- What are the existing or emerging strategies for quality assurance of technology-mediated distance learning programs?
- How can the educational outcomes and experiences offered by these programs and institutions be measured?
- What specific policies and procedures are required for providing quality assurance of technology-mediated distance learning?

The project, which began in December of 1997, is designed to provide information and insights on these questions, using the best available information and data. In preparing this preliminary report, we drew upon information from a variety of sources: a review of the literature on distance learning, visits to distance learning sites and providers, and interviews with distance learning experts (a listing of data sources, including a bibliography and individuals interviewed during the study, is contained in the Appendix).

It should be understood up-front that a discussion of quality in higher education is fraught with difficulty because of the lack of consensus regarding not only the definition of quality but also the components of quality. For the purposes of this paper, we define "quality assurance" in distance learning as the means by which the institutions or providers set their program goals and measure results against those goals. The process reviews academic content, pedagogic techniques, resources, and support services to see how they combine to enhance the learning environment and ensure student academic achievement.

Though this report has collected considerable information that helps to present an analytic framework for characterizing quality assurance in distance learning, the report is far from comprehensive. More analysis and research needs to be conducted on both the issue of quality control, which is CHEA's primary interest, and the financial, legal, administrative, and organizational structures associated with distance learning. Those questions deserve much greater scrutiny if we are to understand the full dimensions of postsecondary distance learning.

The report is organized as follows. It begins with a discussion of the context for the study, including the policy questions that animate inquiry into distance learning. The next section gives an overview of distance learning, and provides a framework for characterizing the universe of distance learning activities

both within postsecondary education and in other venues. The third section discusses quality assurance strategies used by postsecondary distance learning providers, including examples of how the activities are carried out in different distance learning situations. The fourth section compares quality assurance in distance learning with more traditional institutional quality assurance. The paper concludes with recommendations for a policy agenda for academic accreditation as well as for policy development.

The Context for the Study

An improved understanding about technology-mediated distance learning, and quality assessment of it, is important for several reasons:

1) Distance learning continues to grow both as a supplement to traditional institutions and programs and, increasingly, as a replacement for those institutions and programs. What was once an ad hoc mosaic of individually accessed, non-credit educational programs is quickly being knit into comprehensive curricula from which students can obtain both credits and degrees. Therefore, it is increasingly important for policymakers and the public to be able to learn whether the quality of education in distance learning programs is at least comparable to education obtained in conventional institutional settings, recognizing that the measure of "quality" in traditional institutions already ranges considerably, from research universities, to teaching colleges, to urban community colleges, to professional certification programs, to culinary institutes.

2) Significant market and political forces are behind the move to expand options for distance learning. These include both state-based interests, such as the Western Governors University, and private sector interests, such as Ford Motor Company, Microsoft, and Motorola, among many others. These forces have at least the same capacity to challenge conventional thinking about higher education policy in the next 20 years as the proprietary sector did in the last 20. Because the private sector market is so entrepreneurial in nature, much of the momentum for change is coming from outside of traditional collegiate higher education through private sector initiatives, including new private/public collaboratives that redefine conventional institutional boundaries. Among other things, these non-institutional approaches mean that collegiate institutions soon will not maintain primary authority over the awarding of college degrees in this country. The role of accreditation in ensuring quality and integrity in the college degree becomes even more important in this new environment, where institutional measures of quality will become increasingly irrelevant as more credentialing occurs outside of postsecondary institutions.

3) There is increasing interest on the part of some policymakers at both the federal and state levels to develop a level playing field in public policies affecting distance and institutional based higher education. There appears to be some hope that education can be delivered more efficiently and at a lower cost if traditional institutional access is supplemented through distance learning. Having regulatory, financial, or personnel policy obstacles that constrain the capacity to deliver a program integrating traditional classroom instruction and distance learning defeats this goal.

4) Legitimate questions regarding quality and effectiveness in distance learning exist. A key question associated with the expansion of distance learning is whether it will ultimately be another add-on to the array of institutional/learning "options" in American higher education, or whether it will be integrated into—and therefore transform—all aspects of postsecondary education. Certainly

distance learning has transformative capacities that make it unlike other kinds of institutional changes that have come before it. Whether it also can provide true alternatives to existing configurations is the pertinent emerging question.

5) Many see distance learning as an exciting opportunity to increase the pace of change and reform in higher education. For many policymakers and students of higher education, there is a sense that the traditional definitions of quality have the consequence of maintaining the institutional status quo as much as to measure or promote quality and educational value. The belief is that although many institutions are trying to change and restructure, the reality is that they still are too expensive, insufficiently interested in both quality and efficiency, and that the pace of change is too slow. By sharpening the marketplace of competition among students, the hope is that new models of institutional quality and effectiveness will emerge in both sectors. The reform interest extends to a desire to change the way we think about measuring quality as much as the way that we deliver education. Distance learning thus provides us with a laboratory for change—in looking at new ways to deliver high quality education more efficiently and effectively, and in shaping the way we measure effectiveness and quality.

These emerging forces for change will come into focus in the immediate future because the Higher Education Act—the federal law that provides the statutory authority both for student financial aid and for the quality-assurance accreditation structure—is slated for reauthorization this year. In the current law, many students who receive the majority of their education from a "distance"—whether conventional home study or through more advanced electronic media—are ineligible to receive federal financial aid. These restrictions are likely to be challenged in the reauthorization process, both from new providers such as Western Governors University and from traditional institutions that want to expand their distance learning programs. If distance learning programs are to become eligible under Title IV, then the practical political and policy question before the Congress and the higher education community is whether the existing Title IV quality control mechanisms are appropriate for distance learning programs, how they might be changed to accommodate distance learning both in traditional and "virtual" institutions, or whether some wholly new means of assuring quality needs to be created.

What is Distance Learning?

Overview of Distance Learning

An overview of distance learning requires us to begin with some simple definitions. Fundamentally, distance learning is education delivered over a distance to one or more individuals located in one or more venues. Distance learning is not new; with the development of the postal service, commercial correspondence colleges provided distance education in the 19th century. But the advent of information technology, and particularly the Internet, has profoundly altered the character of distance learning by providing the capability for direct and immediate interaction among teachers, learners, and knowledge. For the purposes of this paper, we suggest that distance learning possesses the following characteristics:

- The teaching/learning process involves activities where the learners are at a distance from the originator of the teaching material;
- A combination of media may be used, including television, videotapes, audiotapes, videoconferencing, audioconferencing, e-mail, telephone, fax, Internet, computer software, and print;
- Knowledge and content is available through a variety of sources, not necessarily only from the teacher; and
- Course delivery can be offered anytime and anyplace, and direct interaction is available between teacher and student, student and student, and groups of students.

Distance learning includes "synchronous communication," which occurs when teacher and student are present at the same time during instruction, even if they are in two different places. An example of synchronous communication is when students are in classrooms in remote locations but are watching and participating in a classroom activity through a two-way satellite hookup. Distance learning also includes "asynchronous communication," which occurs when students and teachers don't have person-to-person direct interaction at the same time or place, such as through home computer-based study with student-faculty communication via e-mail, including comments on homework assignments.

Distance Learning Providers

There are essentially four types of distance learning providers:

- The military services;
- Corporate universities;
- Unaffiliated distance learning providers; and
- Postsecondary providers.

This paper focuses primarily on developing a better understanding of the universe of postsecondary providers, and therefore only brief descriptions of the other major types follow. The reader should bear in mind that the transformative capacity of technology is such that some of these "non-postsecondary"

providers could affiliate with postsecondary institutions, or vice versa, for new kinds of collaborative degree and credit-bearing arrangements. For instance, the Western Governors University—a post-secondary provider in our lexicon—plans to offer courses to corporate clients as part of their activities, as well as provide corporate courses to the general public. Many community colleges also offer technology-based contract education for local employers, which is another example of a corporate-postsecondary liaison.

It is important to note that as these words are being placed on this paper, new educational providers are being born, technology is being upgraded, software is being developed, and alliances are being formed. The landscape of distance learning is an ever changing mosaic. For instance, the first edition of *Peterson's Guide to Distance Learning Programs* in 1993 contained programs from only 93 accredited four-year colleges and universities. The 1998 volume contains courses and programs from more than 700 accredited institutions in the United States and Canada. Thus, the following discussion is a snapshot of what is known at the beginning of 1998—based upon information that was gathered several months or a year prior to this writing.

The Military Services

Although all of the military services are involved in distance education, the U.S. Army is embarking on the most ambitious undertaking. The Army is dedicating $840 million over a 13-year period to the Total Army Distance Learning Program to provide global access to training through distance learning. It is important to note that the Army sees efficiency as a major benefit; a savings of $73 million is expected over the implementation period. The goals of the Program are contained in the following statement from the program's master plan. The DOD objective is to use distance learning methods to improve efficiency and effectiveness of military training by:

- Changing the classroom paradigm such that instruction can be delivered anywhere and at any time;
- Designing and implementing innovative and cost effective learning programs that tailor instruction to specific needs of individual learners; and
- Streamlining the training infrastructure to provide increased flexibility and efficiency.

Using the full range of technology options—including CD-ROM, interactive video, computer-based instruction, and the Internet—the Army intends to design 35 courses during FY 1998 and develop a total of 535 courses by FY 2003, in addition to building 204 facilities and 745 classrooms. The distance learning sites will include not only permanent facilities, but also mobile sites capable of moving to remote areas.

Corporate Universities

A large application of distance learning today is employee training. In 1995, over $50 billion was spent on training by employers. Employers most frequently provide training in new employee orientation, performance appraisals, computer applications, and leadership (The Institute for Higher Education Policy, 1996). Though estimates suggest that as many as 1,000 corporate universities exist, the extent to which the corporate sector is using distance learning is difficult to ascertain. Most corporate universities share a common goal: to train all of their employees—not just their professional managers—and to view training as a way to inculcate key stakeholders in the vision, values, traditions, and culture of the organization (Meister, 1994). Employee education focuses on learning for managers and professionals, productivity for service workers, and basic schooling for unskilled workers. A number of corporate universities have emerged during the last decade, and the diversity is startling. Examples include the Aetna Institute for

Education, American Express Quality University, Apple University, Disney University, General Electric's Management Development Institute, the Johnson Controls Training Institute, and the Xerox Document University.

Motorola University is a good example of a corporate university. Established in 1981, the purpose of the enterprise is to build a culture of quality for Motorola, one of the world's leading global telecommunications companies. The university has operations in the United States and around the world, including Australia and New Zealand, China, Japan, Korea, Latin America, and Singapore. The company calculates that for every $1 spent on training, it receives $33 in productivity gains in three years (Wiggenhorn, 1990).

Unaffiliated Distance Learning Providers

Because of the exponential growth of the Internet and the growing demand for lifelong learning, a variety of learning activities are available that are not associated with any postsecondary institution. The major difference between these unaffiliated learning activities and other kinds of distance learning is that they are not credit-bearing, degree, or credentialing programs. One example is Knowledge TV, a cable television channel that advertises "a full line-up of 'need to know' programs that you can watch today and use tomorrow." Some of the programs are actual college courses offered by a variety of institutions that are useful to adults regardless of whether or not they are working towards a degree. There are also weekly programs designed to give information on a variety of topics, such as *Using the Internet in Business*, *The Art of Investing*, *France Deux News*, *Healthy Women 2000*, and *Home Computing*.

Through the Internet, there is a seemingly infinite number of opportunities to gain information about a large number of topics from an array of sources. Such information sources might include a free economics course offered by an individual (www.henrygeorge.org), U.S. Supreme Court decisions (www.findlaw.com/casecode/supreme), and a class on marketing and pricing that is sponsored by Field of Dreams—an online support group for women entrepreneurs (www.fodreams.com).

Postsecondary Providers

Postsecondary providers include both collegiate higher education institutions as well as other entities that provide instruction to degree- or credential-seeking students through learning activities that are typically organized in courses, or "modular" alternatives to courses, for some form of credit.

The U.S. Department of Education's National Center for Educational Statistics (NCES) has provided the most comprehensive picture of the number of postsecondary institutions and students participating in distance learning by conducting a national survey of 1,276 two- and four-year colleges and universities in the Fall of 1995 (Lewis, 1997). The data suggest that a significant number of institutions are attempting to address lifelong learning and learning that takes place anytime and anyplace.

Among the most important findings are:

- Thirty-three percent of higher education institutions offered distance education courses in Fall 1995 and another 25 percent planned to offer such courses in the next three years. The remaining 42 percent did not offer or did not plan to offer distance education courses in the next three years.

- Twenty-three percent of the institutions that offered distance education courses in Fall 1995 offered degrees that students could complete by taking distance education courses exclusively, and seven percent offered certificates that could be completed in this manner. An estimated 3,430 students received degrees and 1,970 received certificates in 1994-95 by taking distance education courses exclusively. To put this number in context, there were approximately 2.2 million degrees awarded at the associate through doctorate level, and approximately 72,000 less-than-one-year awards in 1992-

93.

- Public institutions offered distance education courses with much greater frequency than did private institutions.

- An estimated 25,730 distance education courses were offered in academic year 1994-95.

- There were an estimated 753,640 students formally enrolled in distance education courses in academic year 1994-95

- About half of the institutions that offered distance education courses in fall 1995 directed such courses to students' homes. Thirty-nine percent of the institutions directed distance education courses to other branches of their institution and 35 percent directed such courses to other college campuses. Eighteen percent sent distance education courses to work sites.

- More institutions offered distance education courses designed primarily for undergraduate students (81 percent) and graduate students (34 percent) than any other type of student. Professionals seeking recertification were targeted by 39 percent, and other workers seeking skill updating or retraining were targeted by about half of the institutions.

- Three-quarters of the institutions used distance education course curricula developed by the institution's subject area departments or school. Courses developed by commercial or non-commercial vendors were used by 30 percent of the institutions.

Since the information is now over two years old, it can be assumed that the numbers may be quite different, given the rapid change of technology in distance learning activities. Another survey is anticipated within the next year. It will be interesting to see how much the number of students participating in distance learning has increased and how many institutions now offer a degree exclusively through distance education.

Because of the fluidity of distance learning and its many iterations and forms, it is difficult to characterize the ways in which it is structured and arranged. To begin to provide some sense of how distance learning is delivered, we have developed a typology that distinguishes between the different types of postsecondary providers, both in terms *who provides the education* and *who awards the degree or certificate*. When different organizational arrangements are sorted in this way, there appear to be four basic patterns for organization of distance learning:

Organizational Structures and Approaches

- Enhancements to traditional campus-based instruction;
- Consortia or collaboratives;
- Contracted or brokered arrangements; and
- Virtual universities.

Enhancements to Traditional Campus-Based Instruction

Perhaps the most prevalent form of distance learning occurs as supplements to traditional campus-based instruction. In these cases, the students are regularly matriculated, enrolled in the usual courses, taught by the same faculty, and generally on campus all or most of the time they are studying. The instruction can be offered through off-campus centers as well as on-campus. The distance learning aspect occurs as more and more faculty are setting up websites to supplement their courses, including chat rooms for student study halls, and e-mail communication between students and faculty. While all students can take advantage of these supplements, this aspect is particularly helpful to students who live off campus and who work full- or part-time, because they can get access to faculty consultation, study halls, or library services without having to come onto campus.

The vast majority of institutions offering distance learning are traditional colleges and universities, with on-campus students, who also offer some courses and entire programs of study at a distance. The 1998 *Peterson's Guide to Distance Learning Programs* lists over 700 accredited two- and four-year, public and independent institutions which are providing courses and/or programs at a distance, in addition to their core programs.[1] Besides undergraduate and graduate certificates, associate's degrees, bachelor's degrees, master's degrees, and doctoral degrees are awarded in over 150 programs.

Institutions use a wide variety of media to provide distance learning. Most use a combination of media to deliver programs including television, videotapes, audiotapes, video conferencing, audio conferencing, e-mail, telephone, fax, mail, World Wide Web, computer software, and print. Course delivery sites include the student's home or workplace, military bases, off-campus centers, community facilities, libraries, other colleges, and corporate contract sites.

Among the plethora of institutions in this category, The Rochester Institute of Technology (RIT) provides a good example because it has offered distance learning for almost two decades. RIT is an independent, technology-oriented university with an enrollment of about 13,000 students. Located in Rochester, New York, students in 28 states and seven international locations "attend" RIT classes through distance learning (Witherspoon, 1997). The distance learning programs at RIT include three Master of Science degrees, three Bachelor of Science degrees, and seven professional certificates. Of the 3,500 regis-

[1] The difficulty of determining the number of institutions is illustrated by alternative data provided by a 1995 National Center for Educational Statistics survey of 1,276 higher education institutions. Of the institutions surveyed, 58 percent indicated that they offer, or will offer in the next three years, distance education courses—which suggests that the survey sample was skewed or that the actual number is considerably higher than 700.

trants in 1995, 40 percent lived more than 30 miles from the home campus—both in the United States and abroad. The remaining distance education students were Rochester-area students who used distance learning to overcome time-and-place barriers. One-fourth of these students were full-time day students for whom distance learning courses provided more manageable schedules.

Consortia or Collaboratives

Consortia or collaboratives are cooperative pooling and sharing arrangements among institutions, where several colleges and universities join together through a statewide or regional network to offer distance learning programs. The authority to award the degree or credits is retained by the institutions, and does not shift to the "cooperative" or consortium. Examples of different types of collaborative or consortial arrangements are offered below.

The Education Network of Maine: The Education Network of Maine was created as a unit of the University of Maine in 1988. The Network was charged with the responsibility to serve the university campuses, technical colleges, and K-12 education, and to provide a broad range of services to Maine citizens away from the campuses (Connick, 1995). Off-campus instruction is offered by the Network at the University System centers and over 100 other sites, many of which are in Maine high schools. The Education Network of Maine does not have degree granting authority; the System institutions offer a variety of associate's, bachelor's, and master's degrees which are available through the Network. A critical responsibility of the Network is to identify degrees needed by Maine citizens and to negotiate for their delivery over the Network. For example, Maine imported the Master of Library and Information Science from the University of South Carolina and 180 students enrolled in the program in 1995. Other degrees are being considered for delivery from other states.

The Colorado Electronic Community College (CECC): The CECC offers the Associate of Applied Science in Business entirely over the Internet from any one of the 12 Colorado Community Colleges. Although taking identical courses, students may choose to matriculate from any one of the community colleges. The CECC offers degrees to out-of-state as well as in-state students; as of 1997, the CECC has served 495 students in 34 states and Canada, the Caribbean, Brazil, and Sweden (Sussman, 1997). A state-of-the-art production facility has been built to train faculty from the other Colorado community colleges in the use of educational technology and to provide opportunities for the faculty to produce their own educational products, such as CD-ROM masters, video programs, and Internet curriculum. The College recently announced that starting in January 1998, the community college system will offer a new associate's degree program that students anywhere can take entirely over the Internet.

The Southern Regional Electronic Campus: In 1997, The Southern Regional Education Board (SREB announced the creation of the Southern Regional Electronic Campus, which will enable students across the South to take courses at many colleges and universities through distance education. More than 100 courses from over 50 institutions will be available in the implementation phase, which began in January 1998. Students will enter the Electronic Campus via the Internet where they will find which courses are available, how they are delivered (Internet, television, or videotapes), and how much the courses cost. Students will be able to connect directly to the higher education institution that has the course they are interested in via an "electronic hot link." Once the students are linked to the institution, they can get detailed information regarding courses, registration, and support services. In most cases, they will be able

to register for the course over the Internet.

College Connection: College Connection, one of the cable networks of Jones International, publishes an annual course catalogue which "brings classes and degrees from recognized institutions into your home or office, using videotape, the Internet, and more." The catalogue lists courses, certificates, and degrees from several higher education institutions. The latest edition provides courses and programs of study from 15 colleges and universities ranging from George Washington University, to Seattle Central Community College, to the University of Delaware. Programs offered include: Master's in Business Administration, Educational Technology Leadership, and Nursing; Bachelor's in Business Communication, Nursing, and Social Science; and various associate of arts degrees and certificates. Students can complete a pre-registration form or register online.

Contracted or Brokered Arrangements

Contracted or brokered arrangements are configurations of institutions, faculty, or other providers brought together solely for the purpose of delivering distance learning. In contrast to consortia or collaboratives, in contracted arrangements the degree or certificate authority rests with the contracting or organizing entity, not with the originating institution. Contracted or brokered arrangements extend from networks that are similar to traditional consortia, except that the degree authority has shifted to the coordinating entity. Examples of major types of contracted arrangements include:

Governors State University (GSU): Governors State University is one example of a contracted or brokered arrangement. As an upper-division university with extensive distance learning programs, GSU presently is collaborating with approximately 25 community colleges across the country to enable their adult graduates to complete a general Bachelor's degree program without leaving their local communities. The degree is not organized around any specific discipline or major. Designed for students 25 years or older, the program offers freedom to take any courses that meet their educational or professional goals. Community colleges that are working with GSU are characterized as institutions with mature distance learning programs. Students may take up to 80 credit hours at the community college, complete a portfolio of prior learning from GSU, take a minimum of 15 hours of GSU's media-based courses, and use other educational resources—local or distant—available to them to assemble the 120 credit hours required for the degree. GSU provides academic advising and other support services via technology, while students have access to campus-based services at their community college.

National Technological University (NTU): The National Technological University was founded in 1984 to provide graduate degrees to working engineers across the nation. Television courses leading to several Master of Science degrees and graduate certificates are delivered by satellite to company sites and "public" sites for smaller companies and agencies that cannot provide dedicated company facilities (Witherspoon, 1997). Faculty and courses are drawn from the engineering colleges of 46 member universities. The university's satellite system reaches about 770 sites at companies, laboratories, and agencies, plus 75 associated with the National Institute of Science and Technology and 300 sites in interconnected networks. The participating universities offer over 1,200 courses and the typical NTU course is taken simultaneously by an on-campus class at a member university. NTU is the entity that awards the degree.

The American College of Forensic Examiners (ACFE): Another emerging structure is a group of pro-

fessionals affiliating to offer a degree, as exemplified by a new proposal from the American College of Forensic Examiners. The ACFE is a national membership association based in Springfield, Missouri. The association has petitioned the Missouri Coordinating Board for Higher Education to operate as a post-secondary degree-granting institution, requesting that it be certified as a not-for-profit institution with the authority to grant a doctoral degree in Forensic Science. "The proposal does not include the establishment of an instructional facility or campus, is based on part-time faculty, and would deliver courses via telecommunications technologies. The proposed program does include internship and dissertation components" (Wade, 1997). At present time, the Coordinating Board has not acted on the proposal and has raised concerns regarding the program's curriculum and content, the expertise of the proposed faculty, and the methodology for the program's delivery. Depending on the outcome of this development, it is possible that other arrangements similar to this one may emerge, and that more professional associations will band together to award degrees and sidestep affiliations with colleges and universities.

Virtual Universities

Virtual universities are institutions which offer most or all of their instruction via technological means. These institutions may offer a variety of teaching and learning styles and delivery mechanisms, but what binds them together is their heavy or exclusive use of technology as the educational delivery device. Examples of these institutions include:

British Open University: One of the first institutions of this kind, the Open University was established in 1969. Since then, 30 other open universities have been established throughout the world (State Higher Education Executive Officers, 1994). According to Daniel (1997), the number of students served by British Open University and its progeny is impressive. For instance, in 1995, the China TV University System enrolled 530,000 students, the Anadolu University in Turkey enrolled 577,804 students, and the Universitas Terbuka in Indonesia taught 353,000 students. In many cases, these institutions are the major providers of higher education in their country.

Western Governors University: Western Governors University (WGU) is probably the best-known of the new virtual universities, and is fairly unique in its structure and programs. In February 1996, the Western Governors Association endorsed and approved a document that stated the vision for an institution that would:

- Broaden access to higher education by fostering the use of advanced technology for the delivery of educational services, and

- Provide mechanisms for the formal recognition or certification of learning achieved, regardless of the source (Western Governors Association, 1996).

WGU began pilot offerings in January 1998. In a presentation to the Inter-Regional Accreditation Committee on December 2, 1997, representatives of the fledgling institution stated that it was incorporated as a 501(c)(3) organization in January of 1997 and is pursuing degree-granting authority as a Utah education institution. In addition to offering competency-based associate's degrees, the institution will accommodate credit hour programs and courses for transfer. Sixteen additional programs are being contemplated. The institution is pursuing authority to operate as a postsecondary institution in 16 states and Guam, and has requested experimental site status from the U.S. Department of Education for Federal Title IV purposes.

WGU has engaged a variety of organizations to provide services. IBM is developing the Smart Catalogue/Advisor, which is the main access point for institutions and students to participate in WGU courses and services. The University of New Mexico will provide online library access to WGU students, Washington State University will handle registration and billing, and Follett Express will supply online bookstore services. Courses at WGU will be offered through a variety of higher education institutions and corporate and commercial sources through the World Wide Web and based on asynchronous communication. WGU will not employ teaching faculty and will not develop its own courseware. All academic content for the WGU credential will be furnished by other providers through a solicitation process.

International University: A U.S. based institution, International University offers the Master of Arts and Bachelor of Arts degree in Business Communications. The design of the academic programs based on a learning model which has been developed specifically for adults. Assumptions for the model include:

- Adults learn best when they have opportunities to apply what they have learned to practical situations;
- Adults learn well both independently and collaboratively;
- Adults respond well to varying methods of learning (these different methods address different learning styles and anchor theoretical understanding in real-life applications) and
- Adults are oriented toward problem-solving learning approaches that encourage translating theory into practice.

According to Pamela Pease, president of the University, individual courses are developed by delineating the learning outcomes and then designing the learning activities to reach those outcomes. The institution has two faculty bodies: "content experts," who are acknowledged experts in their field and who design the courses and write the study guides; and "teaching faculty," who interact with students and facilitate the instruction using the course materials designed by the content experts. The content experts are paid to develop courses, which then become the sole property of the institution. The eight-week courses are composed of eight modules. Each module includes practice exercises, a weekly assignment designed to enhance learning, and a World Wide Web assignment. In addition, regular participation in the class listserv discussion is required.

There are four interrelated phenomena that have accompanied the rapid growth of information technology to impact profoundly the postsecondary education community. These cultural and technological catalysts are pervasive and transcend the various characteristics of providers of postsecondary education. They are:

- The emergence of lifelong learning;
- Efforts to make instruction more learner-centered;
- The desire to provide access irrespective of where a student lives; and

Why Distance Learning? Four Themes

- The development of "knowledge media."

Lifelong Learning

In *The Monster Under the Bed*, the marketplace for learning is described this way: "A new meaning of education and learning is bursting on the scene in America. Education for earlier economies was front-ended. When America was an agrarian economy, education for young people between seven and 14 was sufficient to last 40 years of a working life. In the industrial economy, the age range of students expanded to between five and 22. In the information economy, the rapid pace of technological change means that education must be updated throughout our working lives. People have to increase their learning power to sustain their earning power. Lifelong learning is the norm that is augmenting and in some cases displacing school-age education" (Davis, 1995).

Gilbert (1997) identifies a number of forces that he says have made lifelong learning a necessity:

- More jobs and careers require frequent learning;
- More people change jobs and careers often and need to learn additional skills and knowledge;
- People are living longer and find that learning adds quality to their life; and
- Technological and economic progress should enable people to work shorter hours and allow them to have more time for other activities, including learning.

A challenge to the flexibility of the higher education community is this changing nature of the student body. People of all ages participating in learning throughout their lifetime are creating new providers well beyond the traditional educational establishment, expanding not only who gets educated, but by whom.

Learner-Centered Instruction

Mingle (1995) points out that higher education is organized around the needs of the providers, where a "place" to conduct research and teach is supplied. The standards for conducting research and teaching, including faculty workload, space for labs, etc. are centered on the provider and professional needs. These concerns, however, are not the concerns of a learner-centered environment. The concept of "learning productivity," coined by Bruce Johnstone, former chancellor of the State University of New York, is at the heart of the shift from teacher-centered to learner-centered delivery systems. Learning productivity possesses three fundamental characteristics: it is, to a greater degree, self-directed; it is more focused and purposeful; and it employs the appropriate level of faculty mediation. In speaking to his colleagues regarding

the role of the faculty in a learner-centered environment, Swain (1997) asserts the following:

> *The real role of the professor in an information-rich world will not be to provide information, but to guide students wading through the deep waters of the information flood. Professors in this environment will thrive as mentors. They will use the best skills they have now to nudge students through the educationally crucial task of processing information, problem solving, analysis, and synthesis of ideas—the activities in which our time can be best spent.*

Providing Access Anytime/Anyplace

For several years, it has been recognized that learning does not have to take place on a college or university campus. In 1994, the Clinton Administration announced its intention to establish, by the year 2000, The National Information Infrastructure (NII), which is essentially a broad-band digital network (NCC-TET, 1994). One requirement is that the applications of the NII extend into homes and workplaces as well as colleges and universities. A number of courses and academic programs already are being provided to students in venues away from the campus. In the development of their telecommunications plans, several states accept and endorse the notion that educational access should not be impeded by barriers of place and time. For instance, the Missouri Coordinating Board recently made the following recommendation. "The most cost-effective way to increase Missourians' access to quality postsecondary education is to extend programs and services wherever, whenever, and however they are needed using the telecommunications-based delivery system and collaboration among Missouri public and independent colleges and universities" (CBHE, 1997).

Knowledge Media

The term "knowledge media" was proposed by Marc Eisenstadt to describe the convergence of telecommunications, computing, and the learning or cognitive sciences. "Knowledge media are about the capturing, storing, imparting, sharing, accessing, and creation of knowledge" (Daniel, 1996). The combination of technologies coupled with an understanding about the learning process will fundamentally change the relationship between people and knowledge. This medium is not just a technical format, such as a CD-ROM or e-mail, but encompasses the entire presentational style, how the user interfaces, the accessibility of the medium, and the degree of interactivity. Knowledge media provide the opportunity to change the emphasis from the classroom and teaching to the individual and learning (Daniel, 1997).

Quality assurance strategies appear to be integrated into the design of most postsecondary education distance learning programs. These strategies look quite similar to those in traditional institutions and programs, focusing on the following four key aspects of quality assurance:

- Faculty credentials, selection, and training;
- Time-on-task measures;
- Student support services and consumer information; and
- Goals and outcomes.

Specific examples from distance learning institutions and providers are described below to illuminate

Quality Assurance Strategies for Distance Learning

the array of approaches taken.

Faculty Credentials, Selection, and Training

Quality assurance in many programs and institutions focuses heavily on review of faculty credentials, selection procedures for new faculty, and faculty training. Examples include:

Regis University, an independent Jesuit institution in Denver, offers degree programs through Mind Extension University (ME/U). The faculty selection process at Regis University consists of several components. Candidates for a faculty position are required to review and provide feedback of a student paper, write a brief essay on value-centered education, interview with a current faculty member, participate in a leaderless group activity, and facilitate a brief 20-minute instructional segment. In addition, candidates for a faculty position are asked to identify how they would use technology in a learning environment. A newly hired faculty member is assigned a mentor, who is an experienced faculty member. If the candidate experiences complaints from students, the mentor continues working with the faculty member.

Colorado Electronic Community College invests resources in faculty development, training, and courseware development. The CECC has established a digital video and multimedia training and production center for faculty to develop courseware. Faculty from across the state come to the center to create educational content for a variety of educational activities, including live, taped, or asynchronous delivery. Faculty are asked to keep an image of students in mind when they compose course requirements and they are encouraged to think of themselves as "random access support systems" for students. Faculty members can, and do, make videos to introduce themselves to students taking their course over the Internet. The same video also can be used as an orientation for a course delivered live through video conferencing (Sussman, 1997).

In the online program of the **University of Phoenix**, a regionally-accredited, for-profit institution, faculty quality control focuses on credentials, training, and evaluation. Faculty must possess a graduate degree relevant to the field of instruction granted by a regionally-accredited institution. In addition, the faculty member currently must be engaged as a practitioner in the area of instruction and have a minimum of five years practical experience in that field. Faculty are required to participate in an Online Faculty Training and Assessment program prior to being assigned to teach. The program lasts eight weeks and has four components: technical training and online teaching concepts, teaching a mini-lesson, observing an actual course, and assessment. If a candidate successfully completes the eight-week program, the candidate teaches a class with a mentor observing. If the mentor provides a positive recommendation, the candidate is then invited to join the faculty and is assigned classes.

Time-on-Task Measures

Focus on time-on-task measures, including minimum weeks for courses and monitoring of course "log-ins," is common in distance learning programs. Examples include:

Regis University presents courses in an eight-week format, and students are allowed to enter the program every two months. The first five weeks include a total of 10 hours of video instruction, followed by three weeks of independent study. Video instruction is provided through satellite, cable, or videotape—which the student can view as often as needed. In addition to a textbook, each course is accompanied by a comprehensive study guide which provides course objectives, supports key concepts and ideas presented on the video, suggests learning activities, includes instructional materials, and outlines assignments with due dates. The student is expected to spend a minimum of 15 hours per week for study and homework assignments, which are due on specific dates. Interaction with faculty and other students is conducted using ME/U Access, a voicemail system that enables students and professors to communicate, as a group or individually, nationwide.

In the online campus of the **University of Phoenix**, the number of courses required for a degree, the sequencing of those courses, course prerequisites, the seminar format, and the length of the courses are the same as other University of Phoenix courses. Undergraduate courses are five weeks in length and graduate courses are six weeks long; courses are taken in sequence one at a time. The University's online classrooms are "open" 24 hours a day and seven days a week. All online communications are computer text-based, with the faculty able to maintain transcripts of every communication. At any time, students can review and reflect on the transcripts stored in their computers. All students in the class share access to a class group mailbox along with the instructor, which provides a platform for instructor communication to the class and serves as the "main classroom" for discussion. In addition, all students have private mailboxes for personal communication. All students must log on at least five times a week and every student must be in a study group. Class size is limited to 13. At the end of each instructional week, the students provide the instructor with a summary of the major concepts they have learned. The University requires faculty to respond to all questions within 24 hours and to grade and return all assignments within one week of being submitted.

The development of distance learning courses by the **U.S. Army** is based upon the assumption that high quality courseware is essential to the success of distance learning, irrespective of the medium through which it is delivered. Learning experts have been employed to apply research-based principles of learning and instruction to the development of all courseware. As explained by Colonel Chris Olson of the U.S. Army Training and Doctrine Command, whether or not a student acquires the knowledge, skills or competency levels could in many ways result in a life or death situation. The U.S. Army requires that several components must be included in all of its courses. The courseware must:

- Contain introductions that grab attention, tell why tasks are important to learn, include consequences of good and of poor performance, and provide context (what came before, where students are now, what comes next, how task fits into job);
- Provide *structure* that is readily apparent to learner;
- Contain many relevant, job-specific *examples*;
- *Pace* instruction appropriately;
- Generate *student involvement* by devoting 50 percent of training time to student activity, changing activity every seven to 10 minutes, and including four to five planned interactions every hour;
- Contain *questions* requiring analysis, synthesis, and evaluation;

- Provide non-threatening *feedback* to student responses; and

- Contain frequent *summaries* and transitions.

Student Support Services and Consumer Information

Several of the distance learning providers conduct what appear to be rigorous reviews of student support services as one element of quality control. In fact, focus on adequate student support as an essential element of teaching and learning may be one of the most distinctive features of quality control in distance learning environments. Examples include:

At the **University of Phoenix**, students are counseled by an enrollment counselor to determine if they have the professional experience and the academic background to meet admission requirements. Students are counseled that self-motivation and a commitment to devote at least 15 hours per week are required for successful completion of their course of study. Students also receive written information regarding program and admissions requirements, tuition and fees, books, technical and proctoring requirements, program supplies, and support services. In addition, the catalog, program handbooks, and course guides offer very specific information about program and course outcomes and objectives, policies, and procedures.

All communications in the University's online computer conferencing system are asynchronous rather than real-time communication. Students must have a computer and modem and the ability to use them. When students enroll, they are given detailed instructions about when to log on to the computer conferencing system. Along with the textbooks and materials they receive in the mail, they also receive log-on information, communication parameters, and telephone numbers for dial-up access. After reviewing the information, students log on to the system one week prior to the first meeting of their first electronic class to participate in a technical orientation. During orientation, the University evaluates the student's ability to use the system and technical assistance is provided if needed. As students initially log on, they are given access to the appropriate conferences and can then begin sending messages to each other and to the system operator, practicing sending and receiving files, word processing, and, in general, becoming familiar with the system. The system operator sends a series of instructions and practice exercises to the students to familiarize them with all of the conferencing features. The University employs a technical support staff to respond to technical help calls 20 hours a day, six days a week.

The **Colorado Electronic Community College**, **International University**, and **Regis University**, among many other institutions, "outsource" activities related to student services. For example, **College Connection**, part of Jones International, essentially provides all services other than the academic program or course in which the student participates. By faxing, calling an 800 telephone number, using e-mail, or the Internet, a student communicates with personnel for registration, billing, financial aid, advising, and purchasing of books and supplies.

Goals and Outcomes

Assessment of institutional goals and outcomes is a distinguishing characteristic of the quality assurance strategies used in distance learning. Despite this common theme, we found little evidence to indicate that distance learning providers as a community have done path-breaking work to improve the measurement of student learning outcomes. With few exceptions, measures of quality in the teaching and learning

environment look very much like the conventional measures of resources and inputs from conventional institutions.

Some of the more prominent providers are attempting to inject more of a student learning outcomes focus into their overall delivery systems. Assessment of student competencies, as well as of the systems of academic quality, are emphasized in these limited instances. Several examples are delineated below to demonstrate the range of assessment strategies used.

The **University of Phoenix** is a good example of an institution that has stressed assessment as a component of quality control. The University conducts two major assessment programs, the Adult Learning Outcomes Assessment and the Academic Quality Management System.

The Adult Learning Outcomes Assessment was designed to provide adult students with information about their current educational skills and abilities, and to provide the University with information about the currency and effectiveness of all academic programs. The Assessment has four components:

- Professional and educational values assessment;
- Comprehensive outcomes assessment;
- Communication skills inventory; and
- Critical thinking assessment.

The Academic Quality Management System was designed for assessing and managing the quality of educational processes and providing feedback for improvement. Assessment reports are generated on a weekly, monthly, or quarterly basis. Several components are used:

- Student end-of-course surveys;
- Faculty end-of-course surveys;
- Faculty grading practices;
- Alumni surveys;
- Employer surveys; and
- Longitudinal assessments.

At some of the non-postsecondary providers, such as **Motorola University** and the **U.S. Army**, less traditional although still recognizable quality control techniques are in place. **Western Governors University** is being designed around learning achievement or outcomes assessment, which puts it in a distinctive position at this point.

The underpinning of **Motorola University's** commitment to education is what is called a "Return on Expectations" model, which is still being developed. It includes an interrelationship among three major constituencies: the higher level managers, who sponsor the education, the employees who receive the training, and the subject matter experts and instructional designers who develop the learning product. It is the expectation of the corporate managers that education and training will result in higher productivity

and better quality (i.e., a return on investment), among other things. The employees expect the training to be what they need, when they need it, and worthy of their use. The course developers expect to meet the employer needs by producing courses with excellent instructional design and learning integrity. Some components of the model include the following:

- The University is concerned that employees retain the knowledge, skill, and competencies after the training activity is completed. To accomplish this, the employees are sent an e-mail 30 and 90 days after completion of the course and requested to visit a website. The site contains an assessment instrument which evaluates the degree to which the employees retained the information. The results of this assessment are fed back to the course developers.

- Understanding that people learn in different ways, the university ascertains the learning preference of employees who will participate in education and training by providing an online instrument that determines what types of learning methods are best for them. The type of learning activity—semantic, symbolic, or figurative—is then geared to the particular learner.

- Many of the learning activities are separated into short five to 10 minute segments called "chunks." These brief modules allow the employee to experience training during the work day, when the information is relevant. These "Just-in-Time Lectures" are accessed on the employee's computer.

Western Governors University will initially offer a competency-based AAS in Electronic Manufacturing Technology and a competency-based AA in general education. The associate's degrees and certificates will be awarded to students who demonstrate the appropriate competencies by successfully passing assessment instruments that are criterion referenced. In short, both the degrees and certificates are truly competency-based and *whether or not a student completes a course or courses is irrelevant*. There will be at least one local center in each participating state, which will be used as assessment centers and service centers providing access to technology.

The general education goals for all WGU programs resemble those found in most college and university catalogs. The institution has created three councils: the Program Council, which governs the integrity of the academic content; the Provider Council, which reviews and approves individual providers; and the Assessment Council, which oversees the reliability of the assessment instruments.

Since the university will not hire any full-time faculty, the faculty functions are disaggregated and performed by a variety of players. Below is an illustration of the "traditional" faculty functions and their WGU counterparts.

Faculty Functions	**WGU Counterparts**
Curriculum Design/Oversight	WGU Program Councils
Instructional Delivery	Education Providers
Developmental Advising	WGU
Assessment of Student Performance	WGU Assessment Council
Academic Planning and Coordination	WGU Associate Academic Officers

The institution will employ full-time advisors/mentors/tutors—similar to the British Open University model—who have content knowledge and advisor skills and who will work with individual students to advise them on progress, recommend learning experiences, and compile portfolios.

The full spectrum of WGU credentials are based on competencies and learning outcomes which are

determined by the successful completion of an assessment instrument. General education outcomes assurance includes assessments in foundation and cross-disciplinary skills, content assessments in at least three disciplinary areas, and a portfolio. The development of the instruments are the responsibility of the Assessment Council, which is charged with ensuring the technical adequacy of the process, reviewing the instruments, and overseeing standards and operations. The council, staffed by the chief assessment officer, is composed of eight individuals with expertise in their fields.

Our interviews, site visits, and literature review provided a wealth of information about the quality assurance strategies used by distance learning providers. What we have learned is that the strategies for assuring quality in distance learning are not fundamentally different from strategies used in conventional institutions. Quality assurance strategies for distance learning tend to be oriented heavily toward institutional assessment activities, and to affirming that the core capacities to assure quality—such as faculty credentials and student support services—are in place. Thus the review is of resources and inputs more than educational value-added, making it similar to quality assurance in traditional higher education.

As previously noted, institutions providing distance learning through technology employ a variety of quality assurance strategies. This should not be surprising, since many of the providers of distance learning are traditional institutions with on-campus students. In fact, in their development of a plan for a telecommunications-based delivery system, the state of Missouri noted that the principles of assessment of technology mediated learning should in general be the same as those of assessment of learning "on

Comparing "Conventional" and Distance Learning Quality Assurance Strategies

campus" (Resource Group, 1996).

What seems to be most strikingly different is the *process* for quality review in distance learning programs. Instead of a consensus-oriented faculty committee process, quality assurance strategies in distance learning are less consultative and more assessment-driven, and rely more on outside assessment experts. They tend to be carried out by different actors, with greater dependence on outside consultants and assessment "experts" rather than peer review. There is a focus on narrowly defined program goals and objectives, and assessments of results against those goals. That clarity of focus suggests a greater market orientation in distance learning assessments which may not be as evident in the more traditional institutions. For instance, course development at the Colorado Electronic Community College and International University are assiduous and elaborate processes. Similarly, the selection of teaching faculty at Regis University and the University of Phoenix follow rigorous and demanding regimens. The teaching/learning process in courses offered at the University of Phoenix is very structured and requires approaches designed to enhance student interaction. Moreover, the U.S. Army has established very detailed and precise components of courseware which are designed to be consistent with principles of learning.

There is little evidence to indicate that student learning outcomes are a higher priority or are being achieved more readily in the vast majority of distance learning settings than in the more traditional institution environments. However, some of the more prominent providers are attempting to inject more of a student learning outcomes focus into their overall delivery systems. For example, the University of Phoenix has established comprehensive cognitive and affective assessment systems for working adults. Motorola University employs a process where students are assessed one and three months after completion of a course to determine their retention of the crucial knowledge and skills. Perhaps more importantly, managers expect performance to improve as a direct result of the learning activities. The Western Governors University has developed a system where quality control requires the successful completion of an externally administered, criterion-referenced assessment instrument for awarding certificates and degrees. Although WGU will authorize certain providers to supply academic content, the *process* by which the student acquires the necessary knowledge and skills is secondary.

In sum, the major differences between the kinds of institutional characteristics that are typical of most conventional collegiate institutions and those of distance learning programs seem to be:

- ***Difference in Mission and Focus.*** The major stated commitment in distance learning is to the teaching/learning process, and there is a sharper focus on that as an exclusive goal.

- ***Focus on Client.*** The student is regarded first as a client of the organization, and the educational activities that the client desires predominate in the design and implementation of programs.

- ***Less Control by Faculty over Curriculum.*** The tendency to develop or use pre-packaged courses and the preponderance of part-time faculty are characteristics of many distance learning programs.

- ***Less Emphasis on Process.*** The conventional academic culture relies heavily on process, is substantially consultative, and is consensus-oriented. The delivery of distance education programs tends to abandon, at least partially, these traditional quality assurance activities, and appears to be more assessment-driven.

- ***Contracting for Services.*** Many distance learning programs contract with other entities to provide those administrative and student services not directly related to the teaching/learning process.

In many respects, these differences resemble the differences between collegiate and vocational/ proprietary institutions, which have participated successfully in Title IV programs for some time as regularly accredited institutions. To be sure, many of these institutions are accredited by national or specialized accreditors and not the traditional regional accreditors, but the federal law recognizes and supports a diverse group of accreditors, and new accreditors who meet federal quality control standards have emerged to meet the changes in the market. The accreditation process appears to be sufficiently elastic to accommodate the changes in delivery for teaching and learning that have been brought about by distance learning.

This paper provides background information and analyses to help frame approaches to quality assurance in distance learning programs. Much more remains to be done to gather more complete information about distance learning programs, and considerable attention needs to be paid to strengthening policies and procedures for quality assurance. The pace at which institutions are moving into tech-nology-mediated learning is remarkable. A continuing policy development and research agenda must proceed at the same rate, or quality control for distance learning could be bypassed altogether. Such a turn of events could further degrade public perceptions about the meaning of a college degree, and increase potential for consumer fraud and abuse.

To aid in the development of this policy and research agenda, we conclude with some suggestions for next steps, including:

- A policy agenda for academic accreditation;

- Options for federal policy development; and

- Topics requiring additional research and analysis.

Recommendations and Next Steps

A Policy Agenda for Academic Accreditation

The accreditation model remains a viable and effective means for public quality assurance in distance learning. The research conducted for this paper shows that the core processes of setting and measuring standards can work effectively in distance learning settings. If the decision is made by states or the federal government to increase public financial support for technology-mediated learning—including Title IV financial aid—the accreditation role in the triad of quality assurance (see Appendix) remains an effective means to assure quality for purposes of public accountability.

Yet accreditation is challenged by distance learning to adapt standards that are rigorous, to be prepared to re-evaluate traditional processes, to be open to alternatives, and to provide public evidence of measures of performance against the standards. It also must engage in public discussion about fundamental questions regarding the purpose and values of higher education, particularly in degree-granting collegiate programs.

We believe there are central threshold questions about the core qualities of collegiate higher education, and the meaning of a college degree, which accreditors have long struggled with and which have new urgency because of distance learning. They include questions about the core curriculum, and what learning experiences are necessary for the college degree to be awarded. They also require clarity about the role of the faculty as professionals in the institution, with delegated authority over central issues like admissions criteria, student evaluation, and the curriculum. This issue is both one of governance and central educational purpose in a collegiate degree-granting institution. Another concern is whether there are minimum requirements for student involvement in an intellectual community as an element of the collegiate learning experience, and the prominence of the acculturation, personal skills, and values development as central qualities of higher education. This issue concerns minimum expectations for time with others in debate, questioning, give and take, and the like. Physical time in a classroom need not be the only—and may not be the best—way to meet these goals; community service or work-study requirements may be alternative ways to achieve them.

Distance learning substitutes traditional community-based approaches to teaching and learning with new kinds of "virtual" communities. Moving into a non-institutionally based model of teaching and learning means that new ways to validate quality must be found that focus on effectiveness in achieving learning goals and outcomes. To do this requires both adapting traditional standards to sharpen the focus on teaching and learning, and providing to the public evidence of effectiveness in meeting goals.

In addition to posing these threshold questions about values and governance, we offer the following specific recommendations for steps that need to be undertaken by the accreditation community:

Establish reliable and valid performance measurements for distance learning.

Almost two decades ago, Howard Bowen (1980) observed that in higher education, true outcomes in the

form of learning and personal development of students are on the whole unexamined and only vaguely discerned. It is becoming increasingly important (and some would say imperative) for institutions participating in distance learning to identify a clearly understood set of outcomes, especially student knowledge, skills, and competency levels. Once these student learning outcomes are identified, reliable and valid methods for measuring their achievement should be developed.

Require providers to substantiate evidence of contact between faculty and students.
Faculty contact in and out of class is very important in student motivation and involvement. The concern of faculty often helps students get through rough times and continue their studies. Faculty contact—a primary dimension of interactivity—is a common element to student academic success; the more interactive the instruction, the more effective the learning outcome is likely to be (Sumler, 1995). The key ingredients appear to be the availability of the instructor—whether through direct person-to-person contact or through electronic means—and the intellectual engagement of the student, regardless of the method utilized. Evidence of substantial interactivity between students and faculty should be expected even in situations without full-time or conventional faculty. The issues of core faculty and the faculty role in governance are important but separate considerations.

Require evidence of effective instructional techniques.
There is a substantial body of research evidence relating to effective instruction, and institutions participating in distance learning should embrace these techniques. They include:

Modular Learning: Individualized instructional approaches that "emphasize small, modularized units of content, mastery of one unit before moving to the next, immediate and frequent feedback to students on their progress, and active student involvement in the learning process are consistently effective in enhancing subject matter learning over more traditional learning formats such as lecture and recitation" (Pascarella, 1991).

Collaboration: Learning is enhanced through cooperation and reciprocity among students. The learning process involves collaboration and a social context, where working together helps each student. Sharing ideas in a group setting improves thinking and deepens understanding. Study groups, collaborative learning, group problem solving, and discussion of assignments can be dramatically strengthened through technology-mediated learning (Chickering, 1996).

Varied Learning Styles: Students learn in many different ways and bring to the learning activity varied talents and experiences. Technology has the enormous potential to enable students to learn in a variety of ways. Technology-mediated learning can provide dramatic visuals and well-organized printed information, encourage self-reflection and self-evaluation, encourage collaboration and group problem solving, and create tasks requiring analysis, synthesis, and evaluation (Chickering, 1996).

Promote systematic efforts for selecting and training faculty.
Not every faculty member will have the skills and temperament for technology-mediated learning. In addition to careful selection of faculty members, proper training with respect to learner needs and the use of technology is essential. Training needs to be continuous because of the changing requirements of technology. Furthermore, an integrated team, such as computer service technicians, counselors, site administrators, distribution clerks, and library resource personnel, is needed to support faculty efforts (Commission on Higher Education, March 1997).

Assure the availability of learning resources.
Libraries and learning resources are being transformed by technology. The rapid pace of replacing traditional libraries and resource centers with computer networks and online retrieval systems requires that students, faculty, staff, and administrators be provided ongoing orientation and training sessions for accessing information.

Promote ongoing monitoring and enhancement of the technology infrastructure of institutions.
In order to assure that students participating in learning activities do not experience interruptions and/or problems in communications, an institution's technological infrastructure needs to be monitored continually and, when appropriate, enhanced. Major components include expanded network capacity, addition of dial-in ports for remote access, enhancement of e-mail, file-serving and other centralized services, creation of a software library, and enhancement of network security.

Focus attention on the development of courseware and the availability of information.
Courseware is, by and large, produced by faculty on campus, commercial enterprises, or a combination of the two. Regardless of the source of courseware development, the ultimate knowledge, skills, and competency levels contained in the courseware should be determined or approved by faculty possessing the appropriate academic and professional experience. With respect to courseware developed commercially, the institutions should validate the academic quality of the materials and ensure that the courseware is consistent with goals and objectives of the institution's curriculum. In addition, knowledge media are replacing the professor as the student's primary source of information. Since faculty are no longer the major source of information, of particular importance is the ability of faculty to guide students through the morass of the Internet to verify the reliability of information. Faculty also should be capable of identifying or creating courseware that encourages interactivity, collaboration, and modular learning activities, and evokes student motivation.

Examine alternatives to the traditional accreditation process.
The traditional accreditation process has three basic dimensions: the setting of standards, the institutional self-study, and peer evaluation against those standards. The requirements of distance learning suggest that an alternative model, which is less process-driven and more oriented to public information about effectiveness in meeting standards, may be substituted. This is because many distance learning programs—particularly the truly "virtual" universities—do not have the same community of faculty and staff who work together on a daily basis who can easily come together and form review committees. While alternative configurations of committees could be established, including ones that confer by e-mail and conference call, the value-added of committee work in contrast to other means of gathering information should be examined.

Options for Federal Policy Development

As Congress approaches the reauthorization of the Higher Education Act, the question looms large of whether—and if so, how—the federal institutional and student financial need standards should change to permit students in distance learning environments to have access to Title IV. There are a number of issues in the current federal standards that appear to be particularly problematic for distance learning, including:

- **The definition of "sites," "branch campuses," and "locations,"** and the requirement that each site meet standards.

- **Requirements for program length.** Many of the new programs are offered in short-course formats, or are not time-specific at all.

- **Standards for administrative capacity**, including records management for financial aid offices.

- **Requirements for campus security, drug enforcement policies, and crime reporting**, when no campus exists.

- **The requirement that student credit is recorded either in credit hours or clock hours.**

- **The requirement that students be enrolled at least six hours to be eligible to receive aid.** All other things being equal, the restriction against less-than-half-time students in Title IV could mean that the large majority of students in technology mediated distance education programs are not eligible for aid, since many of them enroll in only one course at a time.

- **The measurement of student financial need.** Although the methodology for evaluating income and tuition charges may be adequate for students in these programs, the methodology for calculating student expense budgets—including living expenses, transportation and books—needs to be revisited.

It is easier to identify the regulatory barriers to distance learning than to know how they should be rewritten in a way that does not invite a new spate of fraud in the aid programs. Some of these criteria—such as campus crime data-gathering or the definitions of sites—might be easily changed. But other standards such as financial and administrative responsibility pose more difficult challenges. If enough is not known about how to rework these provisions to accommodate distance learning providers, without inviting new opportunities for fraud, all of the aid programs could become vulnerable. An alternative that might solve the problem would be to create a new definition of a "distance learning" institution in the law, and amend the "experimental sites" provision in the law to extend Title IV eligibility to distance learning institutions that are accredited by a recognized accreditor but fail to meet federal institutional eligibility standards. The experimental sites provision also would allow monitoring and research to be done so that more appropriate standards can be written in the future.

Issues for Further Research and Analysis

Studying distance learning is somewhat like chasing quicksilver: the pace of change in the field is so rapid—both because of changes in technology and in the organizational arrangements for delivering it—that establishing a solid base of information will be a never-ending task. A research effort to obtain definitive information about the state of distance learning is likely to be protracted and self-perpetuating, and could postpone progress in developing appropriate oversight and quality control policies. Nevertheless, more information would be useful in some areas, both in developing appropriate oversight policies and in knowing more about how distance learning might be used as a substitute for conventional higher education. Key questions requiring further research and analysis include:

What are the demographic characteristics of students now being served by distance learning programs, and how does this compare to student characteristics for conventional institutional programs?

- What can we generalize about the matriculation, enrollment, and patterns of learning progression for students in distance learning? What percentage of the average course work is received through distance learning? Are programs geared mostly to vocational, or lower division, upper division, graduate, professional, or continuing education?

- Who (or what) is doing the teaching in distance learning programs? Are there faculty, and if so what percentage of their time is accounted for by employment in distance learning programs? What are their compensation patterns?

- Who designs the curriculum and course materials?

- What do we know about the corporate status of distance learning providers? Are they predominantly public, or private, for profit or non-profit? Are they licensed by the state, and if so how are the regulated? What percentage of the private sector entities are publicly traded?

- For consortium or other partnership organizations, what entity awards the degree or certificate?

- What tuition or fees do students pay for distance learning programs? What percentage of total institutional revenues come from tuition or fee sources? What are the other sources of revenue for the programs?

- Can distance learning be provided at the same or lower cost than conventional education?

- Is there greater capacity to measure student learning outcomes in distance learning programs, and if so, how are learning goals set and measured?

The Triad of Institutional Oversight

In comparing how quality assurance strategies in distance learning programs correspond to conventional measures, a brief characterization of the current procedures for external validation of quality used in traditional institutional settings may be helpful. This description is offered not because the current quality control mechanisms are necessarily "right," but because it provides a point of departure for understanding the differences between procedures for institutionally-based and distance-delivered programs.

In American higher education, external systems of quality assurance are shared between government and higher education in a collaborative arrangement known as the triad. Programmatic, academic, and content quality is reviewed by accreditors. In the second part of the triad, each institution is licensed by the state where it operates. The state licensure system is uneven among the 50 states, ranging from comprehensive state-based reviews of academic as well as financial and administrative capacities (like those in New York and Tennessee), to fairly unstructured systems, as in Alabama, where there is no prior quality or administrative review before a state license is given. In many states, the state permits institutions to operate without accreditation so long as they do not offer degrees, so state licensure alone is required for certificate or other programs. But other states, such as California and Missouri, allow state-licensed programs to offer degrees even if the institutions are not accredited.

The last leg of the triad is the federal review, required of all institutions that participate in Title IV

Appendix

financial aid programs. Most Title IV programs fund students directly, but students must also be enrolled in institutions that meet federal institutional standards for Title IV programs. To be eligible to participate in those programs, the federal government sets and monitors institutional compliance on a number of administrative and financial standards that assure institutional financial stability and appropriate internal administrative and financial aid office controls. The table below depicts, in general terms, the kinds of reviews that are typically undertaken to determine institutional and administrative quality for Title IV purposes.

TRIAD REVIEW STANDARDS

Accreditation Quality Review	State Licensure	Federal Review
• Statement of institutional goals or purposes • Admissions standards appropriate to degree or program • Curriculum design adequate to achieve goals • Content of program outside of curriculum • Faculty roles and responsibilities clearly defined, and procedures followed • Library or learning/media resources adequate to achieve mission • Student evaluation systems and records • Student services capacities • Governance policies and procedures written down and clearly communicated • Evidence of effectiveness in achieving mission	VARIES BY STATE, but may include: • Satisfactory academic progress standards enforced • Availability of course catalogs, admissions requirements, tuition and fee schedules, and other consumer information • Student recruitment practices and procedures • Student counseling and information programs implemented • Employment history of prior graduates • Tuition pro-ration policy • Licensure examination pass/fail rates • Financial capacity and stability	• Standards of institutional financial capacity • Student financial aid program records management • Student need analysis in place • Adequacy of staff in student support and financial aid offices • Appropriate internal financial and administrative controls at each location which delivers more than half of an instructional program • Student loan default management procedures • Compliance with institutional reporting to IPEDS on financial, student, and staff characteristics • Provision of information to USDE on Student Right to Know and Campus Crime • Submission of annual financial audits to USDE • For institutions that advertise job placement in recruitment literature, information on employment statistics and pass rates on state licensure exams • Agreements to have campus security and drug enforcement policies in place • Meet requirements for minimum program length, at least 30 academic weeks • Student eligibility requirements (in addition to financial need)

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The difficulty of determining the number of institutions is illustrated by alternative data provided by a 1995 National Center for Educational Statistics survey of 1,276 higher education institutions. Of the institutions surveyed, 58 percent indicated that they offer, or will offer in the next three years, distance education coursesówhich suggests that the survey sample was skewed, or that the actual number is considerably higher than 700.

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