



VIRTUAL UNIVERSITIES: CHALLENGING THE CONVENTIONS OF EDUCATION

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INTRODUCTION

In recent decades, educational institutions have benefited from the application of the conventional models of instruction and institutional structure that were derived from nearly a century of industrial growth. And while these models were quite useful in the rather stable educational environment that dominated most of the 20th century, the marketplace for education is changing rapidly with the development of information technologies, demand for knowledge workers, and expanding globalization of all sectors (private and public). Leaders of educational institutions increasingly are being held accountable for supporting the growth and long-term success of dynamic learners (i.e., students and employees). Learners today bring rapidly changing requirements to the *learning environment*, and the role of universities in our society is changing equally quickly. Meeting these demands will require not only a new perspective on education, but a new set of tools for institutional leaders as well.

Virtual universities provide a unique function for today's educational leaders around the world. These cutting-edge universities commonly offer glimpses into the possible future of higher education, while at the same time paving the way (in terms of both policy and implementation) for other universities and colleges. The struggles of today's virtual universities will provide the foundation for institutional (and government) leaders in the future as they weigh the financial and academic options of distance education.

Like Jurich¹, who uses distance education to indicate institutions that have as their primary activity provision of education at a distance, regardless of size and technology preference employed, we will apply the equivalent definition to the virtual university. This definition of the *virtual university* incorporates a variety of institutions that may be classified as mega-universities², open universities, and dual-mode universities³, and whose primary programs are at a distance, as well as those that may be referred to commonly as virtual universities.

In this chapter we survey the modes of instructional delivery and administrative structures of several virtual universities.⁴ We identify primary characteristics of the distance education programs offered by these unique institutions and those

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characteristics that may be practical in providing useful educational results through nonconventional educational programs. This review is not intended to provide a complete picture of the current and possible structural models for distance education, however. Rather, by briefly examining essential characteristics from a sample of today's virtual universities, we intend to synthesize for institutional leaders an appraisal of options available when considering information and communication technology (ICT)-supported instruction.⁵ By doing so, this chapter can be used by a variety of decision makers who otherwise may only be familiar with a small number of delivery and administrative options for providing nonconventional educational opportunities.

USEFUL DISTANCE EDUCATION AND THE VIRTUAL UNIVERSITY

Distance education has evolved over time from correspondence courses, to educational radio, to educational television, one and two-way teleconferencing, and videoconferencing, to computer assisted/Web-based interactive learning opportunities.⁶ Yet, with all the technological changes that have evolved in distance education, there have been few changes in the rationale for virtual universities. The virtual university is intended to offer useful learning opportunities to people at times and locations that are convenient to them.⁷ And in recent decades these institutions have been very successful at finding alternative media for providing learners at times and locations that are more convenient than those offered by conventional educational opportunities. Unfortunately, the value and usefulness of these delivery opportunities have come into play rarely in the unfolding of this evolution. A great deal has been written about the technologies that allow organizations to offer educational opportunities at a time and place convenient to the learner. Yet, the usefulness of those opportunities (i.e., the value-added for learners and their constituent partners, including employers and communities) has been questioned or improved only rarely.⁸

How Is "Usefulness" Defined?

Useful distance education provides a measurable value-added toward achieving the results defined by the ideal vision (i.e., the kind of world we want to create for our children) of a society, the mission objective of an organization, and the objectives of an individual.⁹ Virtual university programs that can align and link achievement of results at all three of these levels will be successful. Through linking the success of the learner in the classroom with meeting graduation requirements that lead to future employment, and linking both with continuing positive contributions to the shared community, virtual university programs can align themselves with accomplishment of results that add value for the learner, the institution, and the community.

Usefulness, when defined by results at these three levels, becomes the focus of organizational strategic planning and needs assessment activities.¹⁰ Accompanying each level of measurable value-added is a level of planning and results (see Table 14.1), and the alignment of these three levels of results is essential for continuing success.

Usefulness a Key to Success

Kaufman and Watkins¹¹ suggest that offering “useful learning opportunities” is the key to the future success of educational institutions, particularly virtual institutions.¹² Many educational institutions around the world will offer distance education in the future. Some will use the Internet, others will use satellites, and still others will use technologies we can only dream of today. But those that will make a valuable contribution to learners and society will be those that focus on offering “useful learning opportunities.” After all, does it really add any value to an organization (or a learner) to provide educational opportunities at a convenient (to them) time and location if the opportunity provides little or no value in terms of assisting them, their organizations, and/or our communities in achieving defined and useful goals?

Providing “useful” opportunities, we contend, has always been the intention of the virtual university. From the beginning of correspondence courses during the first half of the 19th century to the modern virtual university, providing students with useful knowledge, skills, attitudes, and abilities is the purpose of successful educational programs. The manner in which they have met the goal or objective¹³ has changed many times over the years, but the goal itself has not changed.

Many institutions are offering high-tech distance education, yet few have focused comparable resources on the basic elements of sound instructional and performance system design (e.g., needs assessment, strategic planning, needs analysis, performance requirements analysis, performance objectives, systematic instructional development, formative evaluation based on performance, continuous improvement). These oversights in instructional design have brought most distance education programs to a point where technology expenditures are exploding, university presidents and boards of trustees are pressing for more effective and efficient institutions, interest from learners in available opportunities is rising, and little progress has been made to validate the value-added of many virtual university initiatives. It is no wonder that so many institutions do little in the way of long-term evaluations; measurable results and useful contributions are not likely to come from placing mediocre education programs on the Internet. Learning, after all, is influenced more by the content and instructional strategies in a medium than by the type of medium itself.¹⁴

We do not wish to suggest that useful results can (or should) be achieved mainly without the use of new technologies. On the contrary, it is the new technologies that likely will allow organizations and individuals to achieve the required results efficiently and effectively. But applying the technologies without a focus, an intended design and development, and continuous improvement toward the achievement of defined results will not lead to the success that organizations are seeking for the future.

TABLE 14.1 • THE LEVELS OF MEASURABLE VALUE-ADDED

LEVEL OF PLANNING	PRIMARY CLIENT AND BENEFICIARY*	DEFINING STATEMENT	RESULTS	EXAMPLES
Mega	Society	Ideal vision	Outcomes	Learners are self-sufficient, self-reliant, and contributing members of the community.
Macro	Organization	Mission objective	Outputs	Graduates master the required skills and knowledge for future employment security.
Micro	Individual/small group	Individual's objectives	Products	Learners master the required skills and knowledge to prepare them for continuing their education.

SOURCES: Kaufman, R., & Watkins, R. (2000). Assuring the Future of Distance Learning. *The Quarterly Review of Distance Education*, 1 (1): 59-67; Kaufman, R., Watkins, R., & Guerra, I. (2001). The Future of Distance Education: Defining and Sustaining Useful Results. *Educational Technology*, 41 (3): 19-26.

* It is understood that the listed primary client always incorporates the clients at the lower levels.

SURVEY OF VIRTUAL UNIVERSITIES

In this section, we examine the essential characteristics of an array of institutions as a basis for comparison with the institutional models being applied internationally. Each of the selected virtual universities has distinctive and exemplary characteristics that offer educational leaders insights into the development of effective and efficient models for distance education.

Peru's Higher Technological Institute (TECSUP)

Peru's Higher Technological Institute (TECSUP) is a dual-mode institution that uses both conventional campuses, in Lima and Arequipa, and a virtual campus that was introduced in 1999. As of 2000, more than 1,600 learners were enrolled in a variety of distance education courses, primarily technical training. According to Wolff and Garcia, learners can access the TECSUP virtual campus through TECSUP conventional campus locations, their workplace, home, or public Internet kiosks. Courses are generally seven weeks and include online content, self-evaluations, and discussions with the instructor and other students.¹⁵ (For more information, visit <http://www.tecsup.edu.pe>.)

The African Virtual University (AVU)

The African Virtual University (AVU) is a single-mode institution that operates without a conventional campus, but uses the facilities of conventional universities in 22 sub-Saharan African universities in 15 countries to provide learners with facilities to access technology delivery systems.¹⁶ Started in 1997, the AVU supports learners across the continent through videotaped instruction and/or live broadcast (via satellite or fiber optic connections), with learners participating in the discussion by way of e-mail, telephone, or fax. Additional reference materials such as books, journals, and course notes are also available for learners. Courses currently offered by the AVU focus primarily on training and certificate programs, with more than 23,000 learners having completed at least one semester-long course. Though current fees per course are still out of reach of many Africans, they generally are much less than those of competitive programs offered by other international universities. (For more information, visit <http://www.avu.org>.)

The University of the Highlands and Islands (UHI)

Serving a dispersed and rural population in Scotland, the University of the Highlands and Islands (UHI) provides a diverse collage of thematic multidisciplinary learning opportunities for both degree-seeking and nondegree-seeking learners. Like many single-mode institutions, UHI uses 50 local learning centers to provide regional support to

learners. Using instructional readings, local classroom instruction, informal tutors, videoconferencing, self-paced computerized instruction, and other media, UHI offers courses that, like most professional development training, focus more on “building individual competencies than the transfer of knowledge.”¹⁷ UHI courses are developed in consultation with employers and are tailored specifically to the needs of the Highlands and Islands. They cover a range of subjects focusing on the region's principal industries and businesses, including fisheries, land management, forestry, marine ecology, and tourism. (For more information, visit <http://www.uhi.ac.uk>.)

The Virtual University of the Technological Institute of Monterrey (ITESM)

The Virtual University of the Technological Institute of Monterrey (ITESM), Mexico, is the primary provider of distance education in Mexico and many other areas of Latin America. ITESM is a dual-mode institution that offers mainly master's degree-level programs through its virtual campus.¹⁸ Using primarily satellite technology, ITESM provides courses to more than 1,300 reception sites throughout Mexico and Latin America. In addition, ITESM offers a franchised¹⁹ master's program in educational technology with the University of British Columbia. (For more information, visit <http://www.itesm.mx>.)

The University of Phoenix (UP)

One of the few private for-profit universities to offer distance education internationally, the University of Phoenix (UP) operates a variety of small campus facilities throughout the United States and an online virtual campus. For the majority of learners, the online campus provides a variety of resources to support their classroom sessions.²⁰ In addition, the UP offers courses that are conducted completely through the virtual campus. In addition, the UP offers nonfranchised international programs to learners around the world through online courses.²¹ Currently enrolling more than 80,000 working adult students, the UP completion rate averages approximately 60% across all programs. (For more information, visit <http://www.phoenix.edu>.)

The Open University of Hong Kong (OUHK)

Previously known as the Open Learning Institute of Hong Kong, the Open University of Hong Kong (OUHK) offers a variety of degree and certificate programs in the arts and social sciences, business and administration, education and language, and science and technology.²² Currently the university offers more than 100 postgraduate, degree, and sub-degree programs to more than 25,000 enrolled learners. The OUHK uses a flexible credit system under which learners earn credits for each course, which accumulate toward a degree. Similar to other open universities—specifically, the

United Kingdom Open University—the OUHK provides course-related materials to distance learners through a variety of instructional media, including text, videotape, and some broadcast television. Additionally, learners are required to attend tutoring sessions at local study centers periodically during each course. (For more information, visit <http://www.ouhk.edu.hk>.)

Nova Southeastern University (NSU)

Like the University of Phoenix, Nova Southeastern University (NSU) offers international programs to learners around the world. NSU is private, not-for-profit university that has students at its conventional campus and learners taking courses offered at a distance. NSU currently enrolls more than 18,000 learners. Many programs at NSU provide dual-mode educational opportunities to students who meet both in person and online. Providing online programs all the way to the doctorate level, NSU's virtual campus supports online learners with an extensive virtual library. (For more information, visit <http://www.nova.edu>.)

The Center for Open Distance Education for Civil Society (CODECS)

The Center for Open Distance Education for Civil Society (CODECS) now offers educational opportunities to learners throughout Romania.²³ In cooperation with the United Kingdom Open University (UKOU), CODECS operates 12 regional centers that offer tutorial support for learners using UKOU instructional materials (including videotapes, instructional texts, course software, etc.). Certificates, diplomas, and degrees attained through CODECS-offered courses are recognized internationally through the UKOU. The CODECS model for institutional structure is a primary example of franchised international distance education. (For more information, visit <http://www.open.ac.uk/collaborate/romania.htm>.)

SYNTHESIS

As is evident from the above survey, the options available for delivery of distance education are expansive. While relatively few institutions provide educational opportunities solely at a distance (like Peru's Higher Technological Institute), most have chosen a dual-mode structure that provides learners with at least some interaction with instructors or tutors. Some institutions, like the University of Phoenix, own or lease their facilities for local learners, while others sign cooperative agreements with local institutions, each ideally designed and built around providing useful skills and knowledge to learners, thereby creating a diverse array of institutional structures.

Similarly, the variety of delivery media used by virtual universities is equally as extensive as their institutional structures. From text-based courses in the mail to satellite transmissions, delivery of distance education can be structured to meet the requirements of the learner while maintaining a financially feasible model for the institution. Choosing the right delivery system is a decision that should not be made outside of the educational context, however. Depending on the needs of the learners and the desired results of the institution and community, selection of the delivery media may even vary across programs within a single institution (like those at Nova Southeastern University).

Additionally, the offerings of virtual universities are growing dramatically. While traditionally focused on professional programs (e.g., teacher education, business, agriculture, etc.), they are venturing now into offering academic programs in the arts and humanities. This diversification of programs corresponds to an increase in the number of degree programs offered at a distance. For example, the Virtual University of the Technological Institute of Monterrey (ITESM) now offers 29, primarily master's-level, degree programs through its virtual campus.

CONCLUSION

There are many educational technologies and institutional structures that can assist in developing successful distance education initiatives. Through dual-mode, as well as single-mode, institutions, learners around the world have more options than ever for achieving laudable objectives through education. Access to these opportunities is, however, only one of the essential components of an educational system focused on the long-term success of learners. The quality and utility of content cannot be an afterthought in the distribution of educational opportunities. Useful educational results are the product of integrated strategic planning, pragmatic needs assessment, instructional design, media development, and systematic continuous improvement.²⁴

Individuals and institutions are often eager to consider the many options related to delivery of instructional content. However, before making those decisions, several questions that are essential to the long-term success of any distance education initiative should be considered: Is planning focused on processes or results? Is it focused on value-added for the individual, the organization, and society at large? Is planning driven by media and content delivery, or by the program's usefulness to the learners and their community? Are needs defined as gaps between the current situation and

required resources or desired results? Are needs (ideally, gaps in results) formally or informally identified and prioritized? Are the courses/programs linked to internal administration or external usefulness? Does a formal, clear, and common goal link courses/programs with other learning opportunities?²⁵

ENDNOTES

¹ Jurich, S. (2000). The End of the Campus University? What the Literature Says about Distance Learning. *TechKnowLogia*, 2 (1): 38-41. Available at: www.TechKnowLogia.org.

² Daniel, Sir J. (1996). *Megauniversities and Knowledge Media*. London: Kogan.

³ Saint, W. (2000). Implementation of Tertiary Distance Education: Choices and Decisions. *TechKnowLogia*, 2 (1): 45-48. Available at: www.TechKnowLogia.org.

⁴ The survey of virtual universities for this chapter was drawn primarily from a series of international case studies published in *TechKnowLogia* (www.TechKnowLogia.org). Additional references and resources are identified throughout the chapter.

⁵ It should be noted that the authors use the terms ICT-supported instruction, distance education, and the virtual university throughout this chapter. These terms, each having a variety of academic and operation definitions, are used by the authors to describe educational events and institutions whose primary mission is to provide opportunities to students at a place and time convenient to them.

⁶ Simonson, M. (2000). *Teaching and Learning at a Distance: Foundations in Distance Education*. Columbus, OH: Prentice-Hall.; Saba, F. (1999). Social Systems in Distance Education. *Distance Education Report*, 3(18): 1-3.

⁷ Kaufman, R., & Watkins, R. (2000). Assuring the Future of Distance Learning. *The Quarterly Review of Distance Education*, 1 (1): 59-67.

⁸ Kaufman, R., Watkins, R., & Guerra, I. (2001). The Future of Distance Education: Defining and Sustaining Useful Results. *Educational Technology*, 41 (3): 19-26.

⁹ Kaufman, R. (1998). *Strategic Thinking: A Guide to Identifying and Solving Problems* (Revised). Arlington, VA & Washington: American Society for Training & Development and the International Society for Performance Improvement; Kaufman, R. (2000). *Mega Planning*. Thousand Oaks, CA: Sage Publications; Kaufman, R., Watkins, R., & Leigh, D. (2001). *Useful Educational Results: Defining, Prioritizing and Achieving*. Lancaster, PA: Proactive Publishing.

¹⁰ This is also a major focus for the dramatic educational change recommendations by Harless, 1998.

¹¹ Kaufman & Watkins, op cit.

¹² See also Kaufman, Watkins, & Guerra, op cit.

¹³ We define "goal" as a purpose statement measurable on a nominal or ordinal scale and "objective" as a purpose statement measurable on an interval or ratio scale. (Kaufman, 1972, 2000). The more rigorous we can be in our statement of purpose, the greater the likelihood of designing subsystems and methods that will add value.

¹⁴ Clark, R.E., & Salomon, G. (1986). Media in Teaching. In Wittrock, M. (ed.). *Handbook of Research on Teaching*, 3rd edition. New York: Macmillan.

¹⁵ Wolff, L., & Garcia, N. (January/February 2001). Higher Education and Enterprise Training in Latin America: The Case of the Virtual Campus of Peru's Higher Technological Institute. Available at: www.TechKnowLogia.org.

¹⁶ Diagne, M. (2000). The African Virtual University: Bridging the Knowledge Gap for Development. *TechKnowLogia*, 2 (1): 21-22. Available at: www.TechKnowLogia.org.

¹⁷ Hopper, R., & Saint, W. (2000). New Paradigm or Exceptional Case? *TechKnowLogia*, 2 (1): 23-25. Available at: www.TechKnowLogia.org.

¹⁸ Wolff, L. (2000). Mexico: The Virtual University of the Technological Institute of Monterrey. *TechKnowLogia*, 2 (1): 32-33. Available at: www.TechKnowLogia.org.

¹⁹ A franchise is a granted right to use someone else's materials and services in a specific territory.

²⁰ Jackson, G. (2000). A New Model for Tertiary Education in Developing Countries? *TechKnowLogia*, 2 (1): 34-37. Available at: www.TechKnowLogia.org.

²¹ Saint, op cit.

²² Jurich, S. (2000b). Quality Assurance in Distance Education. *TechKnowLogia*, 2 (1): 26-28. Available at: www.TechKnowLogia.org.

²³ Ionescu, A. (2000). CODECS Brings the Open University to Romania. *TechKnowLogia*, 2 (1): 68-69. Available at: www.TechKnowLogia.org.

²⁴ See Corry, M.D., & Lynch, W. (1998). Marketing for Distance Education: A Five-Stage Plan. *Technology and Teacher Education Annual*, pp. 404-406; Tu, C., & Corry, M.D. (in press). How to Develop an Active Online Interaction for Learning. In Silberman, M., & Philips, P. (eds.). *Training and Performance Sourcebook*. Princeton, NJ: McGraw-Hill.

²⁵ For these and other essential questions, see Kaufman, Watkins, & Guerra, op cit.; Watkins, R., & Kaufman, R. (in press). Strategic Audit for Distance Education. In Silberman, M. (ed.). *The 2001 Team and Organization Development Sourcebook*. Princeton, NJ: McGraw Hill.