Audiences and providers of distance education

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ABSTRACT. *As noted by Moore (2007), the fifth section of the second edition of the Handbook of Distance Education focused on "some of the main consumers and suppliers of distance education programs" including elementary and secondary education, community colleges, universities, the corporate sector, continuing professional education, the armed forces, and the virtual organization. Each chapter considered the historical development of distance education within each arena as well as policy developments and possible future trends.*

RÉSUMÉ. *Comme le note Moore (2007) la cinquième section de la seconde édition du* Handbook of Distance Education *porte sur « certains des principaux utilisateurs et fournisseurs de programmes d'enseignement à distance » y compris les niveaux scolaires, les « community colleges » (niveau universitaire), les universités, le secteur des entreprises, la formation professionnelle continue, l'armée, et les dispositifs virtuels. Chaque chapitre envisage les développements historiques de l'enseignement à distance au sein de chaque secteur ainsi que les développements stratégiques, et des pistes pour l'avenir.*

KEYWORDS: *distance education, providers, consumers, elementary and secondary education, colleges, universities, continuing professional education, corporate sector, policy.*

MOTS-CLÉS : *enseignement à distance, fournisseurs, acteurs, niveaux scolaires, universités, formation professionnelle continue, secteur de l'entreprise, politiques.*

Introduction

As noted by Moore (2007, p. xxiii), the fifth section of the second edition of the *Handbook of Distance Education* focused on "some of the main consumers and suppliers of distance education programs" including elementary and secondary education, community colleges, universities, the corporate sector, continuing professional education, the armed forces, and the virtual organization. Each chapter considered the historical development of distance education within each arena as well as policy developments and possible future trends.

Virtual and distance education in north american schools

In the United States, the education of students ages 5 thru 18 occurs in what is often referred to as K-12 schools. K-12 schools are comprised of elementary or primary schools, middle- or upper-elementary schools, and high schools. In 2004 the U.S. Department of education (2005) reported 53 million students were enrolled in public and private K-12 schools. In order to ensure all K-12 students receive adequate education, distance education programs have been developed with the "primary purpose of expanding access to curriculum and providing educational choices". Audio-based distance education was the first media source of distance education spanning back to the 1920s and 1930s. Video-based education has also had a long history in the United States dating back to 1933 in the State of Iowa (Kurtz, 1959). More recent advancement in the field of K-12 distance education includes the use of the Internet. The use of Internet or Web-based methods of instruction is the definition of virtual schools (Clark, 2001). Today's virtual school movement is an outgrowth of the 1920s independent-study high school movement. Virtual distance education has directly built upon the learning and support infrastructures of independent study programs and appears to be a growing source of distance education.

The scope of online distant education has steadily been growing from an estimated 40-50,000 enrollment in 2000-2001 (Clark, 2001), to 300,000 K-12 public and private school online-learners in 2002-2003 (Newman, Stein, and Trask, 2003). The U.S Department of Education (2005) estimated 328,000 enrollments in electronic distance education courses through the public school system. Although the majority of enrollments reported (68%) were at a high school level, another 14% were advance placement college-level courses. By 2008, over a million K-12 public school students were taking online courses (U.S. Department of Education, 2009). Cavanaugh (2007) and the U. S. Department of Education (2009) have reviewed the success of distance education in elementary and high schools, although the latter report found relatively few high quality K-12 evaluation studies.

The emergence of virtual schools for K-12 learners in the late 1990s represents the latest series in technological advanced in the field of K-12 distance education. Some

virtual schools are sponsored or sanctioned statewide by state entities. There are also private for profit and nonprofit schools that have developed virtual courses and programs to serve academic and vocational curriculum. Virtual schools have been classified as: state-level virtual schools, virtual charter schools, local school programs, virtual private schools, virtual learning consortia and e-learning service providers. Clark (2007) provides numerous examples of virtual schools in the U.S. and Canada but notes a relative lack of such development outside North America. Audio-based and video-based distance education have been popular for decades, but the trend appears that online distance education will become the preferred mode of delivery.

Virtual distance education is not only an asset to the K-12 learner, but it has also played an important role in the professional-development training of K-12 educators (Schmidt and Faulkner, 1989). Distance education has proven to be an effective way for teaching professionals to meet certification or degree requirements, which can be financially beneficial as many school districts provide pay increases for advance degree and certificate holders. The current state of K-12 distance and virtual learning continues to be affected by several factors including: demographic factors, attitudes in society and schools, education market forces, access and equity issues, and federal and state support policies, all of which influence the demand for distance and virtual education, as well as its availability and accessibility.

Community colleges

Compared to four-year colleges and universities, community colleges in the United States tend to have an older student population, which is more likely to employed full-time. For example, the average age of 11.6 million students who attended 1,158 community colleges across the country in 2005 is 29. The distance education courses provided by community colleges allow professionals seeking to advance their education to do so without taking time off work or leaving their children with a sitter in order to attend a traditional face-to-face class. Since many community college students are part-time students with full-time jobs, community colleges have been particularly aware of the potential of distance education for helping them meet their mission of affordable, open access to higher education. According to the National Center for Education Statistics (2003) 90% of two-year public schools and 89% of four-year higher education public institutions offered distance learning opportunities (Tallent-Runnels, Thomas, Lan, *et al.*, 2006).

Since the early 1970s community colleges have offered their students distance education opportunities. Using television broadcasts, textbooks, detailed study guides, and access to professors via the telephone, students were able to learn course material without entering a classroom. Many colleges only require students to come on campus for proctored exams. Although many college campuses have shifted to more advanced technological ways to deliver course material to students, telecourses

have remained an important part of distance education especially in communities where high-speed Internet is not readily available.

In the mid-1990s the Internet revolutionized distance education in community colleges. With the development of email and online course management software, such as Blackboard or WebCT, colleges have been able to deliver courses in a manner that is more convenient to the faculty and students. In order to assure that courses taught online were equal in quality to those taught on campus, a regional accreditation association endorsed the *Best Practices for Electronically Offered Degree and Certificate Programs* (Council of Regional Accrediting Commissions, 2001), which provided guidelines for current and future providers of distance education online programs.

Guidelines set by regional accrediting bodies state that online programs should meet the role or mission of the university and that all curriculums should be faculty-driven with appropriate staffing and technical assistance (including software) required to provide high quality course delivery. Accordingly, most community colleges with online distance programs have faculty training programs. Regional accrediting bodies also recognize the importance of offering equivalent student support services for both on-campus and distance education students; without such support, some distance education students may not connect will with new technology. On the positive side, many states are creating collaborative programs that enable students to access online courses easily from a variety of state campuses; on the other side, student demand continues to exceed capacity while costs for course development and delivery are increasing rapidly.

Organizational change in higher distance education

Allen and Seaman (2005) reported that by 2005 nearly 22 million college students were taking a course online. Even though universities tend to be conservative and somewhat resistant to change, as they find themselves facing reduced public funding, there is an increased need to be creative and innovative in providing maximum access to education in the most efficient manner possible. In order to accomplish such tasks institutions of higher education are adapting and changing. Distance education has historically brought about procedural and process change in the ways that course materials are delivered to students. More recently it has been suggested that distance education also brought about transformational change in universities as well.

Schlechty (1997) has described three basic forms of organizational change:

1. Procedural change, altering how organizational tasks are accomplished
2. Technological change, changing the means by which jobs are done
3. Structural and cultural (systemic) change, changing the nature of the work itself, reorienting its purpose, and refocusing its intent.

With procedural change, the institution retains its original role, form, and context, while accomplishing its goals with new strategies and tactics. According to recent trends in the United States, learners expect institutions of higher education to be more responsive to their individual needs, which often means providing course schedules and formats that are convenient and easily accessed (Allen and Seaman 2004; Primary Research group, 2004). Certainly, it appears that distance education is becoming a common way for universities to respond. It is even possible that universities are being slowly transformed by changes in technology, competition, and societal demands.

As demand has increased for education focused on the needs of the learner, new institutional forms of higher education have emerged, including for-profit universities and new distance education and technologically based universities (Hanna, 2000). In addition, strategic alliances between two or more existing universities are being formed to build organizational capacity to deliver new services and programs as well as reaching new audiences.

With technological change, the means by which work is accomplished changes. Through the advancement of technology, especially the use of the Internet, distance education has changed the way course content is delivered. Although there have been technological advancements in how distance education is delivered, there often has been little or no change in the content or the instructional processes employed.

Schlecty's (1997) third major process of change is transformational change and involves changing the nature of the work of the university, reorienting it purpose, and refocusing its intent, involving deep change in the culture of the organization. Although it is unclear as to whether or not transformational change is taking place within universities, specifically with distance education, there are some signals that such change may be beginning. Following McNay (1995), Hanna (2007) detailed characteristics of several cultures of higher education – the collegium, bureaucracy, corporation, and enterprise. The latter may fit best with distance education and with transformational change in the university.

Training in the corporate sector

One survey found that the percentage of corporate organizations using electronic distance training had increased from 8% to 27% between 1999 and 2004 (Sitzmann, Kraiger, Stewart, and Wisher, 2006). In the corporate sector the role of management is to ensure that the strategic plan of an organization is aligned so that the mission–critical functions match the core capacities and core competencies of the enterprise. Managers and leaders who are in charge of distance training must decide what courses and programs to produce and what media/infrastructures to use in order to implement these programs. Decisions on such training programs are guided by organizational mission and business needs, usually determined by market research or policy (Berge, 2001; Berge and Kearsley, 2003). Thus managers are utilizing

distance training and education to solve business problems through managing and planning (Berge and Smith, 2000).

As the global society moves from the Industrial Age into the Knowledge Age, where technology has changed how we live, work, and learn; there are more demands for skills, knowledge, learning and relearning. This shift from one age to another has companies in the global economy competing to control intellectual assets, not just physical ones (McCrea, Gay, and Bacon, 2000). This economic mind set for intellectual assets lets employees know that to stay competitive they must always be learning. Just as the employee must be willing to learn, management must continuously provide opportunities to do so. Having the appropriate strategies that link distance training and education to the organization's business goals is important (Galagan 2000; Watkins and Kaufman 2007). Distance training can essentially serve three significant business needs: meeting the challenge of uncommon organizational change, sustaining competitive advantage, and achieving organizational goals.

The key factors that can effect whether or not a business chooses to use distance training and education include: cost to the employer, lack of time for trainees and trainers, fast-paced and quickly changing industries, developing training for high volumes of employees, training for employees who are spread across a geographically diverse area, reduced training budgets, and the need to become a learning organization. If distance training and education is deemed beneficial, the challenge remains to plan and implement programs, involving both pedagogical changes and organizational issues. Other obstacles to distance training and education include individual barriers (Berge and Kendrick, 2005). A factor analysis clustered 64 barriers, reported in a survey, into the following 10 factors; (1) administrative structures, (2) organizational change, (3) technical expertise, (4) social interaction and quality, (5) faculty compensation and time, (6) threatened by technology, (7) legal issues, (8) evaluation/effectiveness, (9) access, and, (10) student-support services (Muilenburg and Berge, 2001).

Although many organizations have good intentions and want to provide distance training and education to their employees, they fail to recognize some key planning and implementing steps that are essential to sustaining distance learning (Howard, 2001). Schreider (1998) presented a 4-stage model that describes stages of organizational maturity, or capabilities, with regard to the delivery of distance training and education.

Stage 1: Separate or sporadic distance learning events occur in the organization

Stage 2: The organization's technological capability and infrastructure can support distance learning events.

Stage 3: The organization has established a distance learning policy, procedures are in place, and planning occurs.

Stage 4: Distance training and education has been institutionalized in the organization as characterized by policy, communication, and practice that are aligned so that business objectives are being addressed.

These stages of an organization's distance delivery capability fall on a continuum. Effective project-management processes create success early in stage 1 and successful program management creates success in the late phase of stage 1 and into stage 2. Success late in stage 2 and into stage 3 is characterized by good organizational development and cultural change made to sustain and implement and use distance training at the organizational level. Success in stage 4 is characterized by effective strategic planning that guides cultural change and resource reallocation for organizational success. Berge (2007) concludes that, in order to remain competitive, corporations will be required to place more emphasis on distance education.

Continuing professional education

Continuing professional education (CPE) is one way that professionals can achieve several important occupational goals including keeping themselves up to date on knowledge and skills, maintaining and enhancing their competence, and advancing their careers. Although the reasons for and benefits of obtaining CPE are straightforward and clear, there remains a debate as to which occupations fit the term "profession." Despite the lack of agreement on which occupations fit under profession, most of the literature on CPE has focused on occupations such as accountants, allied-health professionals, social workers, and realtors as falling within the professional domain. Using a broad definition of professionals, more than 25% of the U.S workforce could be viewed as proper recipients of CPE (Cervero, 2000).

"The significant growth of CPE in recent years has been fostered by a number of factors (Cervero and Azzaretto 1990; Nowlen, 1988; Queeney and English, 1994). Certainly the inherently changing nature of knowledge is a major factor". Professionals themselves are also good consumers of CPE as they want to remain competitive and maintain excellence in their fields. Another factor that affects the use of CPE is the fact that many professions enforce the importance of CPE by mandating continuing education requirements. Mandating CPE for professionals has in many ways become a way in which society can regulation the knowledge base of certain professionals. "Underlying all of these factors is the public confidence that CPE is the best answer for maintaining the competency needed by professionals (Nowlen 1988)".

Kuhne and Krauss (2007) detailed trends in the development of distance education in the fields of medicine, nursing, accounting, insurance, and law. While all these fields require continued professional development, many have been resistant to changing the face-to-face traditional approach even though high quality distance education appears to be at least as effective. A lack of computer skills among potential students and the low quality associated with some distance

education providers have hindered acceptance and use of online distance education among some professionals.

When designing a CPE programming for professionals various providers draw upon three strategies: updating knowledge and skills, increasing professional competencies, or improving personal performance assessment abilities (Nowlen 1988). Regardless of the design, the content of a CPE program has to be delivered in some format. The proper format in which CPE is delivered has caused some debate (Cervero 1988; 2000). Although CPE is important it can also be quite costly, a factor that influences delivery formats. Not only are there direct costs involved, such as travel and conference fees, but there are indirect costs such as not being able to work and thus losing income. It has been suggested that distance education as a delivery format is one of the most significant trends changing the field of CPE (Cervero 1998; 2001). The distance education delivery format allows professionals to take CPE programs with less direct and indirect costs. It has also been suggested that the integration of distance education an CPE in the future will be affected by globalization as the emphasis on life-long learning and global labor markets will increase the number of providers seeking a piece of the CPE market (Perdue, 2003). Because of its many advantages, Kuhne and Krauss (2007) expect that distance education could soon become the preferred approach to professional education.

Distance Education in the Armed Forces: Air Force

In the military, education is not merely a key to success but a key to survival. In addition, there has always been pressure to keep training costs low. Thus, it is not surprising that the U.S. military, especially the U.S. Air Force has been a leader in distance education for nearly 60 years. Initially, distance education was based on correspondence courses – paper-based distance education – but in 1995 the Air Force instituted the Air Force Distance Learning Office, to coordinate the implementation of emerging distance learning technology, including interactive television (ITV), computer-based instruction (CBI), and online classes. In 2000, the extension course programs were merged with AFDLO to become the Air Force Institute for Advanced Distributed Learning (AFIADL), located at Maxwell Air Force Base in Montgomery, Alabama, as part of the Air University. The AFIADL's mission is to "promote, deliver, and manage distance learning for our aerospace forces" (Westfall, 2007, p. 547), using a blended media approach in which "learning objectives and cost drive media selection" (Westfall, p. 550).

In addition to the Extension Course Institute (ECI) that had provided correspondence course support to the Air Force since 1950, recently adding computer-based instruction, the Air Force developed the Air Technology Network (ATN; http://atn.afit.edu), a digital video satellite network patterned after work at the National Technological University of Fort Collins, Colorado. The ATN developed the Government Education and Training Network (GETN) that was expanded to include numerous government agencies, including the U.S. Army (starting with the Army Logistics Management College at Fort Lee, Virginia), the Air National Guard,

the Air Force Reserve, the Defense Logistics Agency, the U.S. Navy, the Department of Justice, the National Parks Service, the Federal Bureau of Investigation, and the Federal Aviation Administration, among several others. The ATN now accomplishes over 260,000 student-hours of training a year for less than 15% of the cost of in-residence training.

The AFIADL provides numerous courses by CBI, ITV, and print through ATN and ECP, including professional military education courses, continuing education classes for civil engineers and lawyers, nearly 400 career development courses, and a smaller number of specialized courses for general military training, medical specialties, chaplain programs, public affairs, safety, weather, contract law, air-crew operations, security police, and logistics plans. While the Air Force expects to continue using legacy methods (classroom instruction, print media, CBI and CD-ROM) continued growth is anticipated for satellite delivery and the greatest growth for Internet delivery.

Distance education in the armed forces: army

Like the U.S. Air Force, the U.S. Army had used correspondence courses for several decades for distance education to supplement resident training. Resident and correspondence training had several disadvantages, particularly in terms of getting exactly the right training at the right time to the right soldier. In 1996, the Army developed the Army Distance Learning Program (TADLP), with the Chief of Staff of the Army, General Dennis J. Reimer, predicting that eventually all leader professional education would involve a mix of distance learning and resident training. In 2002 TADLP was renamed The Army Distributed Learning Program (TADLP) with a goal of harnessing emerging technologies, improving readiness, and providing anytime/anywhere access to training. The Army also developed a secure Internet site, Army Knowledge Online (AKO) with more than six trillion documents as of 2003, one of the largest knowledge management operations in the world. In 2004 the Army directed that the Army Learning Management System (ALMS) be used to register students in classes, track their progress and individual skill development, and provide progress reports to students and their sponsors. The Army also established an electronic university to enable soldiers to earn college credits from remote assignments; as of 2003, at least 40,000 soldiers in 50 nations were using it (Sitzmann *et al.*, 2006). Ultimately, the Army's goal was to provide access to distance learning from soldiers' homes, billets, and even their military vehicles by 2010.

Research on the effectiveness of distance learning (DL) in the Army has been mixed. In general, DL is as effective as resident instruction and may cost less, but resident instruction tends to garner higher levels of student satisfaction. Research with DL for Reserve Component training found DL officer training equivalent in some outcomes, worse in others (Schumm and Turek, 2003; Schumm, Webb, Turek, Jones, and Ballard, 2006). DL did save students in terms of travel time, a benefit

noted elsewhere for civilian teachers (Zirkle, Norris, Winegardner, and Frustaci 2006), compared to traditional formats but the students spent more time in class preparation; overall, total time differences were not statistically significant. In terms of satisfaction, DL students reported higher rates; however, when instructor quality was controlled, satisfaction rates were similar. A major disadvantage for DL students was lack of compensation for their time in pay or retirement credits compared to that received by traditional format students.

Schumm, Webb, Turek, and Ballard (2007) concluded that DL was probably as effective as resident training in the Army but questions would remain until instructor quality was controlled. Furthermore, Army DL training remains embedded within a hierarchy of systems, especially larger social, political, and global systems (Saba, 2007). Questions remained about soldier compensation for DL training and concerning the effectiveness of DL training for dealing with difficult ethical issues or taking away some of the relative respite, from harder tours of duty, offered by resident training, which often includes events such as staff rides (Schumm, Turek, and McCarthy, 2003). DL appeared to give the soldier more time at home physically but not necessarily psychologically; some families may prefer the soldier be at home both physically and psychologically or absent in both ways. DL should be more than the military's way to save time and money at the soldier's expense, shifting costs from the provider to the learner (Inglis, 2007). In conclusion, distance learning will remain and important and evolving approach to improving soldier performance and the Army's combat readiness, but its limitations must be discussed and continued improvements will be needed. While Moore (2007, p. xxv) disagreed with the labeling of distance education or learning as "distributed learning" by the armed forces, our thought is that the new term was chosen because the acronym (DL) remained the same while the new term tried to capture the transition from the military legacy of distance education as primarily correspondence courses to that of distributed networks, networks being a concept that, according to Woudstra and Adria (2007), is transforming entire industries.

Network and virtual forms of distance education

Although the network continues to be the "single most important structural and organizing principle" of distance education, it remains un-theorized and unrecognized in the distance education literature. The authors of this chapter suggest that although there have been some gains in the literature on distance education and organizations, it would be beneficial to draw from the research in business and management information systems. They argue that this research can aid distance education institutions in building "larger, denser and more responsive networks of learners".

In an earlier attempt to map the territory of organizing for distance education Rumble (1986) identified 3 macro-administrative designs possible in distance education organizations:

1. Single mode, in which distance education is the "core business" of the organization

2. Mixed mode, in which both traditional teaching and distance education take place within the same organization

3. Consortium, in which resources, especially teaching resources such as course materials and communications technology hardware, are shared within a region or nation

Researchers have since speculated on the integration of campus and distance education (Dunning, 1990) and examined the effects of information technology on distance education (Holt and Thompson, 1995). They have also explored the effects of emerging technology on both on both distance and on-campus education which has lead to the development of a three-part conceptual framework consisting of knowledge webs, virtual communities, and shared synthetic environments for enabling distributed learning (Dede, 1996). Although it has been suggested that the Internet would encourage campus-based organizations and distance education organizations to converge as interactive networks- based technologies are more extensively used in both (Bates, 1997) the economic capacity of administrations to respond to such convergence has been questioned (Rumble, 1981). The authors review three models of economic organization, based on market, hierarchy, or networking. Virtual networks are seen as the future of distance education as they permit greater levels of innovation and more rapid adjustment to changing needs, enhancing organizational competitiveness. In particular, advanced networking will facilitate the growth of customer virtual learning communities whose needs for information, based on their particular values, are met by a variety of interconnected, professional sources. Know-how, speed, and trust are discussed as the critical components of networks. Personal relationships rather than hierarchical relationships lead to the trust associated with networks and online communities. The authors cite about.com as an excellent example of virtual networking; we would caution that the success of such ventures may hinge on obtaining free labor from enthusiastic volunteers, which may border on exploitation. The chance to work in the virtual organization can be treated as a privilege equivalent to pay, with often false promises of actual pay in the future. Imagine if a discount store would not hire workers for pay unless they agreed to work for free for many months, enjoying the "privilege" of working in an upscale, air-conditioned office? Another issue is that should communities of learners limit learning to that consistent with their values, they may block awareness of new information that could be useful.

The authors applied the concepts of virtual networks to distance education with specific recommendations to engage the complementary strengths and resources of all network members, to improve communication methods and practices as needed, and to give attention to conflict resolution. Other concerns include an emphasis on flexibility, interdependence, checks and balances, initiative and innovation, and continuous

evaluation of progress. However, more research is needed to answer the numerous questions that are raised by the growth of virtual networks in distance education.

Conclusion

One major theme common to all organizations is that they ignore the advantages of distance education at their own peril. Some will apply distance education as a supplement to their operations; others will allow distance education to transform their operations, if not their goals and strategies. Organizational culture will largely determine how rapidly and effectively distance education is integrated into the organization's networks. At the same time, that integration should be evaluated so that the most effective approaches are retained and enhanced. As distance education and virtual networking become more routine within organizations, they must not become processes that devalue the employee by shifting rewards away from and costs to the worker or student. As organizations try to meet the needs and values of their learners, there remains a danger that information flow may be restricted to material seen as value-compatible (conservative communities may only engage with "conservative" material), reducing serious debate and deeper learning. Furthermore, ethical considerations must not be overlooked in distance education training; research should be conducted to determine if such considerations can be and are being given sufficient priority through distance education as applied within corporate, educational, and military organizations.

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