Chapter 13

Increasing Access to Higher Education Through E-Learning

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http://dx.doi.org/10.5772/60906

Abstract

Students with disabilities, rural students, students with parental responsibilities, and military students are populations who now have increased access to higher education due to E-Learning. Access limited by the location of the student, life circumstances that cannot be changed, or responsibilities that cannot be ignored, no longer act as barriers to higher education. This chapter examines how E-Learning benefits each of these populations and examines possibilities for international collaborations. The online environment has caused educators at all levels to re-examine how education might be delivered and who might benefit from this increased access.

Keywords: E-Learning, Access, Higher Education, Technology

1. Introduction

This chapter focuses on increased access to higher education that has resulted from E-Learning and reviews the literature addressing (a) students with disabilities, (b) rural students, (c) students with parental responsibilities, and (c) students currently serving in the military. A discussion of potential international collaborations that can occur thanks to the online environment is also included.

The National Center for Education Statistics [1] defined distance education as:

a formal educational process in which the instructor and the student are not in the same location. Thus, instruction might be synchronous or asynchronous, and it may involve communication through the use of video, audio, or computer technologies, or by correspondence (which may include both written correspondence and the use of technology such as CD-

ROM)...Hybrid/ blended online courses were defined as a combination of online and in-class instruction with reduced in-class seat time for students. (para. 1)

E-Learning in higher education has reached many unique populations. Students who have accessed higher education through E-Learning include (a) students with disabilities [2-7], (b) rural students who find it difficult to relocate [8-13], (c) parents with children [6, 14, 15], (d) military personnel [16-18], (e) students working full time [6, 19], and (f) urban students who find it easier to time-shift rather than space-shift [20, 21]. Renes and Strange [22] pointed out, "The National Center for Education Statistics reported in the 2006-07 academic year, 66 percent of the 4,160 2-year and 4-year Title IV degree-granting postsecondary institutions in the nation offered college-level distance education courses" (p. 204).

Students who have done well in E-Learning formats include:

(a) adult learners [23], (b) students who are self-directed learners [24], (c) students in rural areas [8, 25], (d) students who value interdependence [26], (e) students who must remain employed and require flexibility [25], and (f) students needed by their communities [8, 27]. [22, p. 204]

2. Students with disabilities

E-Learning has increased access to higher education for students with disabilities and allows many of these students to pursue their education in a place more suited to their needs than the college classroom. Some of the earliest work in distance education designed to meet the needs of these students occurred after World War II and the Korean War [28]. Texts were made available on tape; lectures were recorded; and students were taught using tutors, tape recorders, and the telephone. Herbert Rusalem was a pioneer who advocated for students with disabilities.

As Madeus [28] pointed out, in 1962 Rusalem wrote:

Physically handicapped college students requiring one or more special educational services are no longer a rarity on the American campus. Having the same goals as other students, they are enrolling in increasing numbers, encouraged by better public and private school preparation, improved rehabilitation services, the availability of scholarship funds, and a changing attitude toward disabled persons in our society. Since these sources of encouragement will probably become more influential in the future, in seems likely that the problems of educating the physically handicapped student will be receiving increasing attention. (p. 161)

Rusalem's [29] belief was that students with disabilities could achieve the high standards expected in higher education when certain modifications were made available.

In addition to students with visual or hearing impairments, students with disabilities who might benefit from E-Learning include students with cognitive or neurological disabilities (such as attention deficit disorder, autism, post traumatic stress disorder, traumatic brain injury, or memory impairments); physical disabilities (such as arthritis, repetitive stress

http://dx.doi.org/10.5772/60906

injuries, quadriplegia, or paraplegia); and more temporary disabilities resulting from recent injuries or surgery [30].

There is currently momentum to evaluate and enforce the federal accessibility standards for online courses and this enforcement is significant, as it will allow students with or without disabilities to choose the learning delivery system that is most beneficial, given their particular circumstances [22, 30]. Three federal laws currently direct E-Learning programs with regard to accessibility standards: the Americans with Disabilities Act (ADA) and Section 504 and 508 of the Rehabilitation Act of 1973 [5, 28, 30-32]. Equal access to education is required by the ADA, and Section 504 provides for equal access to education but also stipulates that any educational institution receiving federal funding must ensure that web based programs, including E-Learning opportunities, are accessible to students with disabilities. Section 508 requires that types of technology are defined and include provisions that establish a minimum level of accessibility. The types of technology referred to in Section 508 include web-based and software applications, telecommunication products, and multimedia products [32].

E-Learning instructors often make their courses inaccessible without realizing it, as few instructors are trained to be aware of barriers for students with disabilities or barriers to accessibility in E-Learning courses [32]. However, it is the instructors' responsibility to make sure all students have access to course materials [33]. Courses designed to meet the needs of students with disabilities might also assist other students [34-36]. R. Mace in 1997 coined the term Universal Design for Learning (UDL) to describe a course design that improves the accessibility of course to students with different learning styles, different backgrounds, different abilities, and disabilities [32, 35, 37]. Far from being a "one size fits all," when done well, UDL offers various assignments and alternative learning tools to assist students. Roberts and colleagues [30] say students often do not want to disclose their disability for a variety of reasons and frontloading courses following UDL principles is especially helpful for these students. Tandy and Meachum [32] suggest that universal design helps "normalize" the experience of being disabled as UDL practices meet a variety of needs for students. For example, when an E-Learning instructor includes an audio and written description of the tools available to enhance watching a YouTube video, no student is singled out and all students might benefit from the enhancements in some way.

When designers follow UDL guidelines, physical environments, communication options, and the products developed are accessed by people with various characteristics including but not limited to:

age, race, ethnicity, gender, native language, and levels of ability to hear, see, move, and speak. When the range of characteristics of potential students is considered, distance learning course designers create learning environments where all students and instructors can fully participate, just as architects design buildings that can be used by those who walk independently, walk with crutches, push baby strollers, and use wheelchairs. [37, p. 236]

Some of the more common tools include (a) captions for lived synchronized media, (b) insuring colored images are available in text format, (c) providing spoken versions of the text, and (d) lectures that can be repeatedly paused and restarted.

The technology required for E-Learning might take time for students with disabilities to learn [35]. However, the career commitment held by many persons with disabilities is often a key factor in their completion of a higher education program delivered in a distance format [38]. The number of students with disabilities desiring higher education is on the rise and addressing their needs could increase the number of students participating in E-learning courses [30, 33]. "An accessible course makes it possible for students or instructors with disabilities to interact with others in the class regardless of impaired mobility, speech, or vision" [32, p. 314].

3. Rural students

Information communication technology now available to a large number of rural students has increased the higher education opportunities for these students, but E-Learning for rural students is still challenged by significant barriers. The success of the rural student appears dependent on adequate preparation of (a) the faculty, (b) the rural student, and (c) the college or university supporting E-Learning. Lack of preparation by any one of these three potentially reduces the effectiveness of E-Learning. Owens and colleagues [9] interviewed 49 non-indigenous graduate and undergraduate students located in remote areas in Australia who completed distance education courses between 2003 and 2007. Three significant barriers were identified: (a) feelings of isolation, (b) the knowledge and attitude of the teaching staff, and (c) the ability to use the required technology. The quality of interaction between the student and the institution and the amount of communication was seen as the key to success. Communicating frequently with individuals who appeared caring and supportive deterred feelings of isolation, but the perception of not being treated as well as the students on campus undermined the distance learning experience. These conclusions are similar to what other studies have found [e.g., 39].

Training for faculty for e-learning online instruction in higher education varies significantly across institutions [2, 12, 40-43]. Faculty willing to accept the challenge, who are not overwhelmed by the expertise needed to both develop and then deliver a course in this manner, are often small in number [44]. Understanding rural students so instructors can teach in a culturally responsive way and improve the students' learning experiences requires another level of expertise [9, 45, 46]. Instructors serving rural students need to acknowledge the reasons their rural students do not want to leave their communities to attend school. Are they needed in their home communities and families to serve a vital role, are the travel costs prohibitive, are they hoping to avoid some of the discrimination and racism that exists on college campuses? Remaining sensitive to the needs of their rural students is vital for faculty serving rural students through E-Learning. Serving rural students from Indigenous communities will be more effective if the unique learning styles of the Indigenous people are understood and incorporated and if cultural and linguistic traditions including Indigenous knowledge are invited in to the E-Learning classroom [46].

Getting started in E-Learning can be challenging for rural or remote students due to possible insecurities about learning, potential disruptions to family life, and the financial cost of

http://dx.doi.org/10.5772/60906

education [9, 11]. However, a strong desire on the part of rural students to pursue higher education has also been reported [13, 22, 44, 47], along with an understanding of the self-disciplined and self-regulated style required by E-Learning and an appreciation of the access to qualified or specialized instructors. The partial anonymity offered in E-Learning can actually make participation easier for rural students [25, 48].

The sense of isolation often felt by students engaged in E-Learning, including rural students, is well documented [22, 36]. Rural students, many who are first generation college students or members of other underrepresented groups in higher education, appreciate consistent and respectful communication with instructors and other members on the main college campus [47]. Prompt feedback from the instructor on how they performed on assignments is reported to reduce anxiety and the sense of isolation for rural students. Students are not generally looking for social interaction in the E-learning classroom but they do want to interact with their peers, their instructors, and the course content.

Institutional factors necessary to successfully launch and maintain e-learning programs are documented elsewhere [22, 25, 40, 49, 50], but a factor pertinent to successfully serving rural students is an understanding of the digital divide [11, 13, 41, 44, 51, 52]. The digital divide is a term used to describe economic and social inequality that exists for certain populations with regard to their access to, use of, or understanding of information and communication technologies [53]. In other words, who does or does not have fast, reliable Internet service and who is or is not able to use it. Higher education institutions hoping to serve rural students must appreciate the limitations of technology in both student access and student understanding of the technology. Many rural students do not have access to personal computers, requiring students to rely on the computers available in local schools or community centers, if available, and many rural students do not have access to computer training skills or access to a fast broadband connection [9, 13, 51]. Colleges and universities committed to (a) increasing student access to technology, (b) increasing student understanding of technology, and (c) improving the types of Internet access available are likely to see an increase in student enrollment and improve the chances for rural students to succeed in higher education.

4. Students with parental responsibilities

Students who are balancing student life, family life, and possibly job commitments often find E-Learning courses fit more easily in to their schedules. Like the students who live in urban environments, having the ability to time-shift rather than space-shift makes higher education more manageable [20, 21]. Specifically, women who have families and jobs, [14, 58], students parenting young children [6], and students who are pregnant [54] were found to benefit from E-Learning. Parents can see the task of getting to and from campus (with possibly a side trip to child care) as overwhelming when other responsibilities are looming. Another factor that makes E-Learning appealing for students with parental responsibilities is their experience of feeling "out of place" on a college campus, which can jeopardize their academic success [55]. The E-Learning environment often puts students who are parenting in touch with other

students who are juggling the same responsibilities of wanting time to study, wanting to spend time with their children, and needing to earn a living [56].

The scheduled time for many face-to-face classes often conflicts with family responsibilities. However, parents who pursue higher education are often doing so for their children as much as for themselves, as they see themselves as role models for their children [56, 57]. Integrating their children in to the educational process by showing them the E-Learning platform, talking about assignments, and discussing successes as well as setbacks was reported to help with the flexibility parents need when completing college courses through E-Learning.

Students who are supporting families are part of the category of adult learners, defined as students age 25 and older who have multiple responsibilities, experiences that contribute directly to their learning, and goals based on well defined needs [58]. According to the National Center for Education Statistics (NCES), between 2008 and 2019, the number of students between the ages of 25 and 34 is projected to increase by 28 percent and for students 35 years of age and older, the projected increase is 22 percent. This compares to the 12 percent projected increase for "traditional" college students aged 18 to 24.

Following a critical review of the characteristics of adult students and adult learning theories, Cercone [23] determined that high quality E-Learning for adult students includes (a) collaboration and social interaction with peers, (b) the opportunity to connect new information with past experiences, (c) immediate application of the new knowledge, and (d) the opportunity for self-reflection and self-regulation of learning. Integrating these elements allows for what Majeski and Stover [10] describe as deep learning, a learning that is collaborative in nature, includes self-reflection, integrates new knowledge, and is directed toward an application. Deep learning moves learning from memorizing facts to integrating new knowledge with that which is already known, enriched by the fact that it occurs in a social environment.

5. Military populations

More than any group of soldiers in the past, current servicemen and servicewomen have the financial and technological resources to pursue higher education while still active in the military [17]. Even when remotely deployed, the E-Learning environment has made higher education accessible, making almost irrelevant the geographical requirements that used to exist for higher education. The current unparalleled availability of E-Learning along with an understanding of the benefits of higher education among prospective soldiers makes distance learning an effective tool for military recruitment. Prospective soldiers are aware of the benefits of higher education that will be available to them in their post military lives [17, 18]. Most men and women who are enlisted recruits do not have a college degree because, in general, they enlist before attending college [18]. However, approximately 90% of the recruits have a high school diploma or have obtained a GED, making recruits eligible to apply to colleges and universities.

While the structure of the E-Learning might fit well for military populations, the success of the military student will depend, in part, on the instructor's understanding of military culture [16,

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59, 60]. Soldiers who are also students often work very hard and can set high standards in the E-Learning environment as they have been trained in the importance of duty and discipline. Students who are in the military often show great respect to the instructor, and are often willing to follow instructions and meet deadlines, as these have been reinforced in their daily lives as members of the military.

Higher education may support military students moving up the ranks and because their focus is "mission based," they often benefit from structure and well-defined goals with activities that lead directly to those goals [60]. The well-structured format along with clear and active communication between students and their instructors is essential when teaching distance students who might be unexpectedly taken away from the online environment or might be working in threatening and stressful environments. Letting students know ahead of time how TDY (Temporary Duty Yonder), PCS (Permanent of Station) or unexpected military assignments will be handled will be greatly appreciated by military students, as is constructive, consistent feedback from the instructor to let them know how they are performing in the class. Colleges and universities offering classes in an E-Learning environment to military students should understand that military students often do not complete their degrees until after their military service is done due to the threat, stress, and the unpredictability they might be dealing with [17].

6. International collaborations

International collaboration among students and instructors occurs easily in online formats [25]. With online international collaboration, learning is expanded beyond the local context. Including various cultural groups in the online format invites new ideas and views in to the learning community, potentially enriching the lives of the students and teachers involved [61-63]. The increased diversity that international collaborations offer in the E-Learning environment increases awareness of global and cultural issues and allows experts from other countries to participate and share their expertise. Online international collaborations that develop can be structured in a variety of ways and often develop from ordinary people taking on what Ife [64] describes as "globalization from below," an approach by interested local parties not driven by governments or institutions, that often result in international exchange that is more participatory in nature.

Students, teachers, schools, as well as institutions, and governments can benefit from international collaborations [61]. Leppisaari and Lee [65] investigated an international collaboration between students in Finland and Korea focused on environmental education. Leppisaari and Lee found that students in the study were enthusiastic about the subject matter; the students shared information and documented real world solutions to environmental problems using mobile phones and digital cameras. This sharing of information allowed students in both countries to view environmental problems from a new perspective, allowing them to better understand their own communities. Along with the subject matter, the students were also excited to learn about the culture and customs of another school. As the result of the pilot

study, Leppisaari and Lee stated that the collaboration showed the possibilities of "cyber space pedagogy" (p. 244).

Colleges and universities hoping to increase diversity in both the face-to-face and E-learning classroom have entered in to agreements with developing countries that have a need for postsecondary education, resulting in networks of international education [61, 62]. These networks can result in aid for developing nations and academic publications and other academic acknowledgements for the faculty. Successful frameworks are now available and describe how to develop successful collaborations.

With the new opportunities now available for international collaboration come new caveats. When a classroom has an international community, the instruction coming from one culture might not follow the norms of the other students' cultures [66, 67] and questions asked from a western viewpoint might not be relevant to students living elsewhere [68]. Differences in communication styles and differences in teaching styles, both heavily influenced by the culture of the teacher and the student, make pedagogical sensitivity essential [69]. Part of this sensitivity includes an understanding of electronic colonialism [70], which means imposing western values on students from non-western cultures in E-Learning environments. Leppisaari and Lee [65] point out that while international learning communities develop around common interests, the pedagogy often has not caught up with the technology. Organization, continuous technical support, time allotted for development of the structure of the collaboration, and time allotted to develop trust between the collaborators are all key to successful collaborations [62, 63, 68].

The development of successful online collaborations requires that each group of collaborators understand their goals, hopes, fears, the time commitment involved in setting up and actually collaborating, and their beliefs about what will occur in the collaboration [71]. International collaboration can be a dynamic experience when there is sufficient planning and understanding among all the parties involved [68]. When teaching critical thinking skills and creative problem solving, it is essential that students examine situations from a variety of perspectives, and international collaborations in E-learning offer this environment. Mitroff and Linestone [72] stated, "because of long and arduous years involved in mastering a particular discipline, the academic/professional mind easily becomes the prisoner of a particular way of viewing the world" (p.34).

7. Conclusion

Information communication technology has increased the number of ways students and instructors interact with each other, the location of students who do the interacting, and the types of learning and student communities that can develop. The UDL principles that assist students with disabilities were found to improve the learning environment for all students. When working with rural students, understanding the digital divide and addressing these barriers will further increase their access to higher education. Understanding higher education as it relates to recruitment and rank in the military and understanding the military culture will

allow better experiences for military personnel who choose to pursue higher education through E-Learning. Suspending the demand for a four-year completion rate now seen in higher education will ease the pressure on all of these populations, probably more for students with parental responsibilities than any other student group. Finally, while acknowledging the "cyber space pedagogy" [65, p. 244] that could develop as the result of international colonialism, the possibility of electronic colonialism described by Boshier and colleagues [70] must also be acknowledged and prevented.

Can E-Learning also be a platform that does not support oppression and allows education to be de-colonized, offering opportunities for all those who for various reasons have been denied the opportunity? In examining the new opportunities now available to students with disabilities, rural student, students with parental responsibilities, military populations, and the opportunities for international collaborations because of the E-learning environment, it is obvious that access to higher education can be increased due to E-Learning. The challenge now available for E-Learning is how to make this new learning environment less oppressive, more inclusive, and more collaborative than learning environments in the past. Successfully addressing this challenge will not only benefit the E-Learning but improve the face-to-face classroom environment as well.

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