Visions Shaping the Future of Online Education: Understanding its Historical Evolution, Implications, and Assumptions

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Abstract

The purpose of this paper was to present a historical background of online education, review its current status, and provide visions shaping its future in an attempt to understand its potential and limitations that will lead to the advancement of the scholarship of teaching and learning. Online instructors must understand the way online education has evolved over the years from previous conceptions of education and the wide array of implications and assumptions involved in the delivery of online education. Recommendations for the advancement of online education, including future research, are given.

Introduction

Distance learning has existed for many decades. Correspondence courses delivered in Europe are the earliest form of distance learning (Flores, 2004). The increased demand for online courses has resulted in a significant growth in the number of institutions offering such courses (Labonty, 2005). In the 2000-2001 academic year, 90% of 2-year and 89% of 4-year public institutions offered distance education courses (National Center for Education Statistics, 2006).

Much research has been conducted related to teaching and learning online. The Illinois Online Network (ION) is a faculty development initiative "that provides comprehensive professional development opportunities in the area of online teaching and learning to faculty and staff from higher education institutions in Illinois and beyond" (ION, 2006a, para. 1).

The ION staff argues that "effective online instruction depends on learning experiences appropriately designed and facilitated by knowledgeable educators" (ION, 2006b, para. 1). They recommend the use of a variety of instructional strategies including learning contracts, discussions, lectures, self-directed learning, mentorships, small group work, projects, collaborative learning, case studies, and forums. The ION staff claims that:

Because learners have different learning styles or a combination of styles, online educators should design activities that address their modes of learning in order to provide significant experiences for each class participant. In designing online courses, this can best be accomplished by utilizing multiple instructional strategies. Teaching models exist which apply to traditional

higher education learning environments, and when designing courses for the online environment, these strategies should be adapted to the new environment. (ION, 2006b, para. 1)

According to the Online Learning Center at the University of Houston—Victoria (2003), effective online instruction involves translating the unique benefits of face-to-face interaction to online activities. The Center encourages professors teaching online to get students to be actively involved in their learning by designing activities that promote student interactions and build a sense of community among students and faculty.

Perhaps the most comprehensive review of literature related to online learning was conducted by Tallent-Runnels et al. (2006). These authors found little consistency of terminology used in the online learning environment. In addition, they found that:

Most of the studies reviewed were descriptive and exploratory, that most online students are nontraditional and Anglo American, and that few universities have written policies, guidelines, or technical support for faculty members or students. Asynchronous communication seemed to facilitate in depth communication (but not more than in traditional classes), students liked to move at their own pace, learning outcomes appeared to be the same as in traditional courses, and students with prior training in computers were more satisfied with online courses. (Tallent-Runnels et al., 2006, p. 93)

The purpose of this paper is to present a historical background of online education, review its current status, and provide visions shaping its future in an attempt to understand its potential and limitations that will lead to the advancement of the scholarship of teaching and learning. That is, online instructors must understand the way online education has evolved over the years from previous conceptions of education and the wide array of implications and assumptions involved in the delivery of online education.

Historical Background

This section presents a historical background of online education divided into various themes that emerged from the literature review.

Increased Access

William Harper, first President of The University of Chicago, is considered one of the founders of "learning by correspondence" programs. Harper later developed a more advanced correspondence program that became an integral part of the university, allowing students to complete a maximum of 30% of coursework through mail (Holmberg, 1986; Storr, 1966; Watkins, 1991). Teaching by mail became central to The University of Chicago, allowing the institution to reach a large number of individuals regardless of age, gender, geographic location, and other demographic and socioeconomic characteristics. It was a way to reach international students and to respond to institutional inequalities by reaching out to a more diverse group of students (Larreamendy-Joerns & Leinhardt, 2006).

Other colleges and universities followed the example of The University of Chicago and became involved in "learning by correspondence" programs. For instance, The University of Wisconsin and The University of Kansas developed leading "learning by correspondence" programs (Watkins, 1991). These programs, however, were challenged by the academic community (Pittman, 1991), as the absence of an appropriate distance learning organizational structure was

notorious, including the lack of incentives (e.g., financial support, course releases) for distance education faculty (Burrell, 1954; Watkins, 1991). In addition, the academic community questioned the lack of interaction among students. In summary, distance learning initiatives were under tight scrutiny and remained marginal to most colleges and universities (Stein, 1971).

Today, while the skepticism still exists, the academic community holds several visions for online education. The vision that constantly emerged from the literature review is that it provides a learning opportunity to a diverse group of citizens (e.g., working professionals) otherwise unable to obtain needed training (Gordon, 2006; Larreamendy-Joerns & Leinhardt, 2006). This vision is consistent with the concepts of corporate universities and just-in-time learning (Oblinger, 2001).

Changed Focus

Several changes have taken place in online education over the years. Online education has moved from a minor alternative role of "learning by correspondence" to the center of life at most universities (Feenberg, 1999; Larreamendy-Joerns & Leinhardt, 2006). The Internet has played a significant role in these changes (Wallace, 2004) because it has assisted instructors to more effectively respond to the limitations often cited regarding online education (Murray, 2003) and it has been used to deliver instruction to students and employees at remote sites (Oblinger, 2001). Colleges and universities have tapped into the online market in an attempt to increase revenues, expand educational reach, and recover a portion of the investments made in technology (Holzen & Rickman, 2003; Oblender & Glass, 2004). These large investments in technology are justified by the increased revenue and by their impact on the educational institutions' rapport with the outside world regarding the use of cutting-edge technology to deliver online education (Larreamendy-Joerns & Leinhardt, 2006).

Several signs of these changes are evidenced by the following events. First, an increasingly higher number of universities are requiring their students to enroll in at least a few online courses (Golden, 2006). Second, the U.S. Senate is tinkering with the idea to relax the rule by which a college or university must enroll no more than 50% of its students through online programs if their students are to be eligible for Federal financial aid (Carnevale, 2003). Third, Harvard University's faculty commission is considering reducing the time residence required of their students to earn a degree (Young, 2002).

Fourth, other Tier I institutions of higher education have embraced the initiative to deliver high-quality online courses and, consequently, have launched online program initiatives that vary in scope but integrate top-notch instructional and cognitive principles (Larreamendy-Joerns & Leinhardt, 2006). Fifth, a significant increase in the amount of scholarly publications regarding the role of online education in the transformation of teaching and learning is evident (Larreamendy-Joerns & Leinhardt, 2006; Wallace, 2004).

While many educational stakeholders have claimed that online education threatens the quality of instruction delivered, others have viewed it as a great opportunity to overcome the limitations of face-to-face classroom instruction. These conflicting views, however, are not necessarily unique to online teaching and learning, as anything that has challenged the effectiveness of face-to-face classroom instruction has caused major controversies (Larreamendy-Joerns & Leinhardt, 2006).

Instructional Quality and Learning Outcomes

Much debate exists regarding the characteristics of instructional quality of online education. Most individuals tend to measure the quality of online instruction against standards established for face-to-face classroom instruction (Tucker, 2001). The expectation has been to demonstrate that online education is at least as effective as face-to-face classroom instruction. This expectation is exemplified by the fact that researchers have usually attempted to compare online and face-to-face courses in terms of learning effectiveness by using experimental, quasi-experimental, or causal comparative methodologies and have found online instruction to be at least as effective as face-to-face teaching (Bata-Jones & Avery, 2004; Tallent-Runnels et al., 2006).

However, skeptics of online education continue to provide the same arguments since the inception of online education. That is, critics of online education have expressed concerns regarding the validity of research studies that have compared online and face-to-face instruction in terms of learning outcomes because different instructional modes and media were used. On the other hand, research studies that have compared online courses possessing different structures have yielded valid results because researchers are able to investigate the interaction between learner differences and the features of online instruction, using the same instructional mode (Tallent-Runnels et al., 2006). Most concerns are based upon the natural limitations of instructional technology such as the perceived lack of social interaction and immediate feedback, inability to address the learning needs of a diverse group of students, lack of transparent academic activities by for-profit online schools (e.g., diploma mills). Lastly, there is a perceived lack of strong credentials of faculty involved in the delivery of online instruction (Larreamendy-Joerns & Leinhardt, 2006).

Supporters of online education have responded to these criticisms in a variety of forms. While some have accepted the limitations of online education and have proposed instructional strategies to more effectively deliver online instruction, others have conducted empirical research studies to demonstrate the effectiveness of online instruction. Some other individuals have challenged the quality of instruction delivered in a face-to-face classroom (Larreamendy-Joerns & Leinhardt, 2006). Still other researchers have used descriptive research methodologies to investigate student perceptions of online courses and found that, generally speaking, students reported a relatively high degree of satisfaction with the online experience and expressed an interest in taking more online courses in the future (Gaytan, 2004).

Other research methodologies have been employed such as experimental comparisons of online and face-to-face classroom learning and correlational research to look into the relationships among various aspects of online learning such as the learners' satisfaction levels and overall characteristics, and the features of the online learning environment. Generally speaking, students possessing computer training and experience were more satisfied with online courses (Kim & Moore, 2005; Tallent-Runnels et al., 2006).

In summary, critics of online education have reached hasty conclusions regarding the quality of online instruction because they have not carefully considered the ultimate goals, processes, and products of online education (Larreamendy-Joerns & Leinhardt, 2006). Quite often, online education has been required to demonstrate levels of quality that have been seldom found in face-to-face classroom instruction (Jaffee, 1998). Most empirical research has focused on the technology being used rather than the quality of instruction itself (Cuban, 1986; Russell, 1999).

Learning Environment

The literature review clearly revealed that most research studies related to online learning environments have used descriptive research methodologies and small populations, making it difficult to make generalizations to the larger population (Tallent-Runnels et al., 2006). In addition, most of these studies have failed to provide evidence to support the contention that certain assessment tools are more effective than others. That is, the authors of these studies do not fully understand the dynamics of effective online pedagogy, as they struggle with questions related to whether or not effective online assessment techniques should be based upon the characteristics of outstanding face-to-face teaching and learning such as: challenging students to think, providing a reason to want to step into the classroom, displaying a willingness to give extra help and encouragement, and giving varied and meaningful assignments (Marshall, 2003; Tallent-Runnels et al., 2006).

Several researchers have found significant challenges when assessing student learning in online courses (Liang & Creasy, 2004). However, other researchers have demonstrated a clear understanding of online assessment as they argued that online assessment requires a more ongoing, systematic approach than used with face-to-face instruction (Robles & Braathen, 2002). In addition, as the assessment methods must match the level of desired competencies, online assessment requires educators to modify their methods of instruction to make them more innovative than traditional instruction because it changes human interaction, communication, learning, and assessment methods (Robles & Braathen, 2002).

Several research studies demonstrated the importance of developing online learning communities by exposing students to effective, constant, and consistent online communication, modeled by the instructors, and practiced by the students as they formed small groups. Another theme that emerged from the review of these studies is that increased interaction among the online course participants had a positive effect on learning. The interaction, however, must be based upon a thorough understanding of course content by participants (Gaytan, 2006; Tallent-Runnels et al., 2006).

Characteristics of Learners

Regarding the characteristics of learners, the literature review showed that most students taking online courses were older than the typical undergraduate student. In fact, most students were older adults highly motivated to achieve the course learning outcomes. In addition, the literature review demonstrated a shift in the focus of the research from determining the impact of online instruction on student learning to identifying the factors that motivate students to take online courses, methods that would best match the course design with the students' learning styles, and aspects involved in the effective delivery of online instruction (Tallent-Runnels et al., 2006).

While convenience has been cited by students as an important advantage of online courses, quality of instructional design has emerged as an important aspect of an effective online course. In addition, students claimed that being able to control the pace of the lesson is crucial, despite the fact that more self-management is required (USA Study Guide, 2006). Designers of online courses must take into account the various learning styles of online course participants (Gaytan & McEwen, in press; ION, 2006c). The relationship between learner characteristics and online delivery tools available has also received increased attention. In fact, online course designers are taking into account the learner and faculty characteristics, online delivery tools available within the context of institutional mission and vision statements (Tallent-Runnels et al., 2006). Finally, several studies revealed an important need to continuously train the faculty and students in the effective use of online technologies (McEwen & Gaytan, 2006; Wells, 2000).

National organizations have recommended several benchmarks for online courses. For instance, one of the benchmarks has to do with establishing institutional policies for online courses. While most institutions of higher education have developed written policy related to online courses (e.g., course delivery mechanisms, faculty and student requirements), such policy does not include course development, training, support, and evaluation (Tallent-Runnels et al., 2006).

In addition, faculty members expressed a need to obtain assistance related to online course development and delivery as well as finding effective assessment techniques (Southern Region Education Board, 2006). They also thought that they should be compensated for developing courses online (Carnevale, 2004). In addition, faculty and students expressed an interest in receiving training that would allow them to maximize the various features available in the online teaching and learning environment (Feist, 2003). Furthermore, on-going technical support is highly desirable by faculty and students engaged in the online experience. For faculty, this continuous technical support is crucial because research has shown that the more the technical difficulties experienced by the students the lower they rated their instructors (Lan, Tallent-Runnels, Thomas, Fryer, & Cooper, 2003).

Current Status of Online Education

The historical background of online education presented above revealed that, in order for online education to work effectively, it requires (a) a constant and consistent adaptation by all parties involved, (b) addressing the financial challenges, (c) progressive leadership, (d) dealing effectively with the politics that get in the way, and (e) much commitment from educational stakeholders (Watkins, 1991). However, the current status of online education reveals "a story of grandiose promises, marginal commitment, and abandonment" (Larreamendy-Joerns & Leinhardt, 2006, p. 582). In other words, online education has failed to follow the ascending trend of technological innovation and questions regarding the quality of online instruction continue to emerge, as critics continue to question the way online instruction addresses the various learning needs of a diverse group of students (Larreamendy-Joerns & Leinhardt, 2006).

The current status of online education also reveals that there is an important role that online instruction plays in society because it reaches a significant amount of individuals historically underserved. Supporters of online education continue to argue that instructional quality can override the technological limitations. That is, instructional quality can be achieved despite the technological shortcomings. While instructional quality involves the effective integration of technology into the learning environment of the classroom, it also requires a vision of what students must learn and be able to do, student engagement, and a thorough understanding of content knowledge and effective online delivery strategies by the instructors (Larreamendy-Joerns & Leinhardt, 2006).

However, issues related to online instructors continue to represent an ongoing challenge. Problems will continue to emerge anytime that there is a difference in the way online and face-to-face faculty are treated regarding academic qualifications, research opportunities, salary, and evaluation criteria. Another problem has to do with the following:

Quality is undermined when business becomes the prevailing model of distance programs. While a market approach to distance education may allow institutions to secure funding and increase revenues, it may bypass academic controls and practices in favor of supply-and-demand opportunities if unchecked. Business models may dissociate, in the name of efficiency, course

conception and development from their pedagogical enactment, and in doing so compromise the desirable integrality of the scholarship of teaching. (Larreamendy-Joerns & Leinhardt, 2006, p. 583) These issues are very critical and must be addressed effectively to enhance the sustainability of online education.

Visions Shaping the Future of Online Education

Among the various formats of online education, it appears that stand-alone instruction may have the greatest potential to becoming "massive, effective, and comparatively inexpensive instruction" (Larreamendy-Joerns & Leinhardt, 2006, p. 584). By "stand-alone" online instruction, it is meant Internet-based instruction without the human interaction (e.g., simulations, virtual laboratories, and Internet-based multimedia modules). This high-tech, Internet-based instruction has given online education more credibility to the point that online instructors and educational researchers have begun to engage in productive dialogue that may lead to learning improvements in both types of instructional delivery.

Progressive online multimedia environments will continue to facilitate the effective delivery of online instruction because they mimic the dynamics involved in high-quality, face-to-face classroom instruction. For instance, well-designed Internet-based instructional models will continue to flourish because they support problem solving and allow detail-oriented instructional guidance using highly structured tasks (Larreamendy-Joerns & Leinhardt, 2006).

Recommendations

Online education will contribute to the advancement of the scholarship of teaching and learning only if several critical issues are properly addressed.

1. Top-notch faculty must become heavily involved in the planning, design, and implementation of online instruction and must continue to engage in formal, scientific research that will lead to the advancement of the scholarship of online teaching and learning. While online education was originally established as an extension of mainstream instruction, it must not play a marginal role or be separated from mainstream academics. It must not become a second-class form of instruction (Caplan, 2004; Larreamendy-Joerns & Leinhardt, 2006).

2. Pedagogical decisions must not be transferred from outstanding scholars and instructors to the individuals involved in the technical aspects of online education. That is, school administrations must provide incentives to faculty, teaching online courses, to assume ownership of their own courses. For instance, financial incentives, recognition, and great importance in tenure decisions should be given to faculty involved in the development of own online courseware (Caplan, 2004; Larreamendy-Joerns & Leinhardt, 2006).

3. Educational stakeholders must cease to measure the quality of online instruction against standards established for the face-to-face instruction. The expectation has been to demonstrate that online education is at least as effective as face-to-face instruction. This expectation is exemplified by the fact that researchers have usually attempted to compare online and face-to-face courses in terms of learning effectiveness by using experimental, quasi-experimental, or causal comparative methodologies and have found online instruction to be at least as effective as face-to-face teaching (Bata-Jones & Avery, 2004; Tallent-Runnels et al., 2006). The "at least as effective" phrase can be interpreted in various ways, including the following: face-to-face instruction and online education have

the same quality, online education is not better than face-to-face instruction, or online education mirrors the deficiencies of face-to-face instruction. In other words, countless individuals have challenged the quality of instruction delivered in a face-to-face learning environment (Larreamendy-Joerns & Leinhardt, 2006). Quite often, online education has been required to demonstrate levels of quality that have been seldom found in traditional, face-to-face learning environments (Jaffee, 1998). Online education must not be required to be "at least as effective" than face-to-face instruction. It should be required to advance the scholarship of teaching and learning (Twigg, 2002).

4. Successful practices must not be overused in an attempt to design new online instructional strategies. Educational tools must be used to support instruction and not as fixed templates in which the subject matter must fit. If used as templates, the risk is that they will not allow for diversity of academic subjects, student learning styles, and formats of online instructional delivery mechanisms. Instructional diversity is necessary to meet the demand of a diverse society (Larreamendy-Joerns & Leinhardt, 2006; Rotter, 2006; Sobel & Taylor, 2005).

5. Educational stakeholders must understand that self-teaching is not the essence of online education. Online instruction has given a diverse group of citizens increased access to educational opportunities, reducing educational inequality. At the very least, online education must continue to support students by providing additional learning opportunities that do have an impact on students' academic performance (e.g., Web-based instructional modules). While efforts must be made to continue to improve online technology that fosters dynamic interaction among all participants in the educational process, technology by itself will not improve the scholarship of teaching and learning. Instructional practices have the most impact on teaching and learning. That is, online learning environments must foster the development of state-of-the-art instructional strategies, allowing faculty to increase the quality of their instruction (Larreamendy-Joerns & Leinhardt, 2006; Moskal, Dziuban, Upchurch, Hartman, & Truman, 2006).

Future Research

While several studies have provided recommendations for practice and future research, most of them did not provide scientific, research-based models and teaching practices that ensure the effective delivery of online instruction. Future research must focus on developing new scientific models for online teaching and learning, based upon sound research methodologies, not just on faculty and student perceptions or the standard model for face-to-face instruction (Tallent-Runnels et al., 2006).

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