

IMPACT OF ONLINE EDUCATION AND ITS EFFECTIVE PRACTICE

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ABSTRACT

With the help of qualitative content analysis approach, this study reviewed 45 published studies and research on online teaching and learning since 2008, primarily focusing on how theories, practices and assessments apply to the online learning environment. The purpose of this paper is to provide practical suggestions for those who are planning to develop online courses so that they can make informed decisions in the implementation process. All around the world, educational institutions are looking toward online learning platforms to continue with the process of educating students. The new normal now is a transformed concept of education with online learning at the core of this transformation. Today, digital learning has emerged as a necessary resource for students and schools all over the world. For many educational institutes, this is an entirely new way of education that they have had to adopt. Online learning is now applicable not just to learn academics but it also extends to learning extracurricular activities for students as well. In recent months, the demand for online learning has risen significantly, and it will continue doing so in the future. Based on the findings, the authors argued that effective online instruction is dependent upon 1) well-designed course content, motivated interaction between the instructor and learners, well-prepared and fully-supported instructors; 2) creation of a sense of online learning community; and 3) rapid advancement of technology. In doing this, it is hoped that this will stimulate an on-going discussion of effective strategies that can enhance universities and faculty success in transitioning to teach online. Under current debates on the cost and quality of higher education, this study could help for the improvement of higher education and student enrollment and retention. Keywords: online education, online teaching, online learning community, asynchronous learning, cognitive presence, social presence, teaching presence, online higher education.

INTRODUCTION

Education can become transformative when teachers and students synthesize information across subjects and experiences, critically weigh significantly different perspectives, and incorporate various inquiries. Educators are able to construct such possibilities by fostering critical learning spaces, in which students are encouraged to increase their capacities of analysis, imagination, critical synthesis, creative expression, self-awareness, and intentionality. A byproduct of fostering such new approaches has been the creation of online courses developed in the United States and worldwide at exponential speed. It is becoming increasingly common at many higher education institutions, offering fully online and/or hybrid/blended courses combining online instruction with face-to-face teaching. Statistics done by the Pew Research Center (2011) show that in the 2010-11 academic year, 89 percent of four-year colleges and universities offered courses taught fully online, or hybrid/blended online, or other forms of distance/non-face-to-face

instruction (Parker, Lenhart, & Moore, 2011). Of all students enrolled in higher education in 2013, 32 percent took at least one online course (Allen & Seaman, 2013).

The development of online courses in higher education doesn't happen overnight. The 2008 study by the National Center for Educational Statistics (NCES) found that the main factors influencing higher-education institutions to offer online courses included meeting students' demands for flexible schedules (68%), providing access to college for students who would otherwise not have access (67%), making more courses available (46%), and seeking to increase student enrollments (45%) (Parsad, Lewis, & Tice, 2008). Distance education originated in the United States in the 1800's when teachers and learners at the University of Chicago, who were at different locations, tried to connect through correspondence programs (McIsaac & Gunawardena, 1996). Years later, the development of radio as a communication medium during World War I opened the door for using that technology for distance education in colleges and schools such as School of the Air established in Wisconsin in the 1920s (McIsaac & Gunawardena, 1996). With the popularity of television in the 1950s, visual instruction became possible for the first time between teachers and students who were not in the same locations. As computer and emailing technology blossomed in the 1970s and 1980s, distance education began to expand dramatically. The first fully online course was offered in 1981, and the first online program was established by the Western Behavior Sciences Institute in the following year (Harasim, 2000). In the mid-1980s, the first online undergraduate and graduate courses were initiated by several universities and schools. In the late 1980s, due to a shortage of teachers on math, science, foreign languages, etc., some K-12 schools turned to commercial courses offered through the then-new satellite technology, which greatly spurred still faster growth of distance education (McIsaac & Gunawardena, 1996). The advent of the World-Wide Web (WWW) in 1991 was a powerful catalyst for moving distance education forward, and was a milestone in the rapid expansion and growth of online teaching and learning. Maloney-Krichmar and Abras (2003) stated that WWW "facilitated the widespread use of web sites and the development of online community groups supported by web pages and various forms of communications software" (p.4). Since then,

colleges and universities both in the United States and around the world have offered not only just online courses but entire degree programs online as well (Wallace, 2003). Ever since the severe economic crisis of 2008, federal and state funding for education in the United States has been declining. As a result of the high levels of austerity, more and more universities and colleges appear to have shown increasing interest in online education. How has online education evolved? Has it been successful? In what ways has it been proven effective? And what still remains to be done to achieve greater success in teaching and learning in an online environment? These questions have motivated us to conduct this study – reviewing research and studies on online education. At present, fewer studies on online education have focused on examining previous research and studies, and we have conducted a comprehensive review study trying to provide a platform of discussions for educators and policy makers on how to develop and deliver effective online programs. There have been many vigorous debates and thorough studies on the differences between online and face-to-face classroom teaching, which however is not a focus of this study. Instead, this study's focus is on examining the positive aspects and strategies of the online learning and teaching process and how it has been implemented successfully. The goal here is to provide best practices for those who are planning to develop online courses to make informed decisions in the implementation process. In doing this, it is hoped that this will stimulate an on-going discussion of effective practices that can enhance universities and faculty success in transitioning to teach online.

METHODOLOGY

Research Design The research methodology for this study was to review published studies and research on online teaching and learning, the range of which included literature reviews prior to 2008 and empirical research after 2008. For purposes of this study, online education is operationally defined as a format used in learning when learners do not need to be in bricks-and-mortar classrooms. The terms online learning, online teaching, online education, online instruction, and online courses are used interchangeably throughout the article.

Selection Criteria and Sources of Data

The primary literature sources were journal articles and full texts. Because of our intent to examine the evolution of online education and how it was affected in the years following the 2008 economic crisis, a three-stage literature search was conducted, beginning with the literature reviews prior to 2008 as a foundation of our study in Stage I. Then, using the descriptors online teaching, online learning, and online instruction in stage II, we searched through empirical studies published since 2008. Informed by our initial findings from Stage II, we expanded our search descriptors in Stage III to include online course and instruction; cyberspace courses and instruction; computer-based courses and instruction; e-learning, teaching and instruction; webbased teaching, learning, and instruction; Internet teaching and instruction; tele-courses, tele

teaching, and tele-instruction; and virtual learning, teaching and instruction. The major sources we used for data collection were online databases including ERIC, EBSCO, PsycINFO, ContentFirst, Google Scholar, SAGE Online, Project Muse, Education Full Text, and Academic Search Premier. Based on the selection criteria of this study, 47 articles were chosen to answer our research questions: (1) How has online education been evolved? (2) What are the evidencebased effective practices in online teaching? And (3) what are the evidence-based effective practices in online learning? It is noted that education is about teaching and learning and it is also true what is effective in teaching might be equally applicable in learning. Because of the unique nature of online education, we intended to propose the second and third research questions in a way that both students' and teachers' perspectives on the effectiveness of online education can be addressed and emphasized.

DATA ANALYSIS

During our initial review of the literature, we began to note themes of online education emerge. We categorized the themes adhering to the theoretical framework developed by Garrison and his colleagues, which emphasizes social presence, teaching presence, and cognitive presence in online teaching and learning (Garrison, Anderson, & Archer, 2000). Ultimately, we organized the findings into three major themes to answer our research questions, which included the evolution of online education, effective online teaching, and effective online learning. The qualitative content analysis approach (Cavanagh, 1997) was thus employed for the data analysis.

Findings

How Has Online Education Been Evolved? What do we know about online education?

With the development of online education over time, its definition has been evolved. Regarding the aspects of the conversion from face-to-face classrooms to online, McIsaac and Gunawardena Online Education and Its Effective

Practice 160 (1996) defined distance education as “no more than a hodgepodge of ideas and practices taken from traditional classroom settings and imposed on learners who just happen to be separated physically from an instructor” (p.5). Regarding the aspects of technology and organization, Moore and Kearsley (2012) defined that “distance education is teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization” (p.2). Regarding the aspects of being distant, Finch and Jacobs (2012) defined it as “all forms of teaching and learning where the student and instructor are separated geographically and temporally” (p.546). It is noted that there is the purported need for conceptualizing distance education in rapidly changing technology and exponentially growing online education, but its various aspects make it difficult to agree on just one definition and on what constitutes distance education in practice. When asking “Why do we need distance education?” Moore and Kearsley (2012, p. 8) in their study identified the following reasons as to: • increase access to learning and training as a matter of equity • provide opportunities for updating skills of the workforce • improve the cost effectiveness of educational resources • improve the quality of existing educational structures • enhance the capacity of the educational system • balance inequalities between age groups • deliver educational campaigns to specific target audiences • provide emergency training for key target areas •

expand the capacity for education in new subject areas • offer combination of education with work and family life • add an international dimension to the educational experience In discussing the best practices of online education, Finch and Jacobs (2012) stated these advantages: reducing the time and costs for travel; increasing opportunities to access and collaborate with expert professionals in a global range; providing students with flexibility to access courses at their convenience; and allowing adjustments to subjects and content need. The fast development of the Internet and the World Wide Web (WWW) has produced numerous benefits to education. Online education provides potential opportunities to open up new markets for higher education institutions. Many adult learners may enjoy the flexibility when they have to balance work, study, and family responsibilities. The wide range of various technology advancement used by universities’ online programs may enhance the interaction between students and instructors, and among students at large (Bell & Fedeman, 2013). In addition, the nature of the anonymity in the online environment may allow more students, who otherwise do not want to attend face-to-face classes because of their shy personality, to participate in online education where they do not physically see each other. Finally, the upgraded technology and software may allow instructors, students, and university administrators to collect data, feedback, and evaluation regarding their online experiences (Bell & Fedeman, 2013). In the research literature, online education is variously termed as “distance education” “elearning,” “online learning,” “blended learning,” “computer-based learning,” “web-based learning,” “virtual learning,” “tele-education,” “cyber learning,” “Internet-based learning,” “distributed learning,” etc. In this study we considered all of these terms to be sufficiently synonymous and used them interchangeably throughout this article. Sun & Chen 161 Influence of technology and evolution of online course In online education, learning is asynchronous or synchronous or a combination of both. Asynchronous learning is teaching and learning that do not happen at the same time (Moore & Kearsley, 2011), while synchronous learning refers to teaching and learning that happen at the same time, both of which are conducted through technologies such as Internet. When online education began in the late 20th century, most online programs and classes were synchronous and used chat rooms, instant messaging, and texting. Both chat rooms and instant messaging, being synchronous, allow users to decide who participates in the conversation. The invention of @ symbol in 1972 for use in email (Maloney-Krichmar & Abras, 2003), and the advent of the World Wide Web (WWW) in 1991 for the Internet connectivity (Harasim, 2000) have been the latest adapted by online education. The universal use of web sites has provided opportunities for the development of online communities and groups. Emailing, conferencing, chatting, working together via Google drive, Google doc, Google hangout, dropbox, facebook,

Twitter, etc. have been widely used in online classrooms. Online education can be categorized by its users: 1) University-Based Online Education, whose users are individuals enrolled in universities for the purpose of obtaining degrees and diplomas; 2) Massively Open Online Courses (MOOC) (some termed Massively Open Online Class), whose users are self-motivated individuals and whose programs are based on their learning goals, prior knowledge and skills, and similar interests (McAuley, Stewart, Siemens, & Cormier, 2010; Schroeder, 2012). In general, students in the United States enroll in universities where online course formats have been added to already-existing classroom-based courses. At those institutions two modes of online classes are usually offered – fully online courses (not taught in bricks-and-mortar classrooms), and blended/hybrid courses (a combination of face-to-face and webbased and technology-oriented format). Students in these two modes of online programs are granted credits, degrees, and certificates when they complete required courses and internships. To increase the accessibility to higher education by larger segments of the public, the model of Massively Open Online Course (MOOC) was introduced in 2008, which includes university-based and corporate-based online offerings. The university

based offering was initiated by Ivy League higher education institutions, including edX in 2012 by Harvard University and the Massachusetts Institute of Technology (MIT), eduMOOC in 2011 by University of Illinois Springfield, Coursera in 2012 by the joint efforts of five universities (Princeton, Stanford, California/Berkeley, Michigan-Ann Arbor, and Pennsylvania), etc. Most of these are open to the public free of charge, which shows the universities' efforts to encourage the public to participate in online education. Corporate-based online offerings, free or for-profit, were initiated mostly by organizations, corporations, and individuals. Following his resignation from Stanford University, Sebastian Thrun opened up a for-profit online initiative called Udacity in 2011. According to its website, it "offers a range of certification options that are recognized by major technology companies who are actively recruiting from the Udacity student body" (Udacity, 2015). Peer 2 Peer University (P2PU) is an online-education offering operated by volunteers who teach all courses. According to its website < <https://www.p2pu.org/en/> >, it is open and free to the public, which "not only helped learners feel confident about taking an online course, but our retention rates were also higher than in most online learning courses". Initiated by the Saylor Foundation in 2008, Saylor.org is a collection of college-level courses, free and open to the public. According to its website, Saylor.org Academy "is founded not just on open educational resources and open source learning technologies, but also on open access to credentials, and ongoing open learning opportunities" (Saylor Academy, 2015). Online Education and Its Effective Practice 162 Table 1 lists some popular online education initiatives. Although these initiatives are booming exponentially, the debate remains about whether corporate-based online-education initiatives have the credentials to grant credits and degrees to individual learners who have completed their online courses (Schroeder, 2012).

DISCUSSION AND CONCLUSION

Online education is here and is highly likely to stay and grow. The review of its history clearly shows online education has developed rapidly, fueled by Internet connectivity, advanced technology, and a massive market. It has evolved from 19th century correspondence programs to the 21st century's vibrant and well-designed institutional online offerings. We can well anticipate that online education will continue to increase its presence and influence higher education through a vigorous process of reshaping, refining, and restructuring. It is unlikely, however, to replace traditional higher education but merely to be an alternative. But, owing to its flexibility, accessibility and affordability, online education is gaining in popularity, especially for people who are otherwise unable to obtain education because of physical distance, schedule conflicts, and unaffordable costs. Throughout this study, the primary focus was to discuss how theories,

practices and assessments apply to the online learning environment. It started with a basic overview of online education as studied and perceived by Garrison et al. (2000), which served as the theoretical framework for this study. We then examined how presented theories have applied to various aspects of online course design and development. We first examined the online environment over time, its evolvement, and the technologic impacts on online education. In online teaching, we focused our attention on the relationships between cognitive and teaching presences to determine the best and most desirable practices and strategies for online pedagogy. Within the realm of online learning, we directed our attention on the creation of an online

learning community by means of promoting social presence, interactions, and collaboration between the instructor and students and among students.

RECOMMENDATIONS

It has become clear in the 21st century that online education is entering mainstream and becoming a growing market as it continues to expand access to learning for more people (Gallagher & LaBrie, 2012). Therefore, online instructors and students need to synthesize information across subjects to critically weigh significantly different perspectives and incorporate various inquiries. In doing so, they need to construct such possibilities by means of fostering critical learning spaces, where students are encouraged to increase their capacities of analysis, imagination, critical synthesis, creative expression, self-awareness, and intentionality in action. Only well-designed and effectively delivered online courses can survive to fulfill the possibility of blending the borders of the classrooms and to connect formal learning to broader space and vast social issues through an energetic online learning community. In the end, education is about encouraging different ideas, various viewpoints, and a cacophony of voices. Online instructors are widely viewed as facilitators (e.g. Brindley et al., 2009; Crawford-Ferre & Weist, 2012; Gabriel & Kaufield, 2008; Keengwe & Kidd, 2010; Rao & Tanners, Online Education and Its Effective Practice 172 2011) who should foster a merger between diverse theories and live experiences. Instructors should encourage students to relate their discussions, assignments and group work to their own experiences, to the viewpoints of others, to subject matters, and to their own learning and work. Current, online education is mostly the model of one-size-fits-all standardized curriculum that ignores the needs of students (Saba, 2012), and a focus should be more on exploring how online offering could meet individual learners' needs and provide differentiated online instructions through the course design.

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