A Preliminary Historical Report on Embracing Online Education in Occupational Therapy

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Abstract

The relevance and popularity of online occupational therapy education have been increasingly recognized. This paper describes the historical development of online occupational therapy education. Findings revealed three shifts in occupational therapy education, namely shifts in perception, in mode of instruction, and in the roles of teachers and students. The inception of online education in occupational therapy was a product of technological advancement and the demand for improved access to occupational therapy online education. The early phase of occupational therapy online education was confronted with challenges related to hesitance in the development and implementation of online programs and to negative perceptions about online education. The development and implementation of online occupational therapy programs were greatly shaped by factors such as technological tools, methods of teaching delivery, and the dynamics of teaching and learning processes. The potential of online occupational therapy education remains vast, but experts caution that quality should not be compromised.

Comments

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Online learning has become more common in occupational therapy, as evidenced by the proliferation of online occupational therapy courses in entry-level and postprofessional master's and doctoral level programs (American Occupational Therapy Association [AOTA], 2017). Online learning can potentially provide more access to education for those who are unable to study in a face-to-face classroom format (McKimm, Jollie, & Cantillon, 2003). Moreover, online curriculum content can be made available from any location and at any time. However, the infrastructure necessary to support online learning can be costly (McKimm et al., 2003).

The terms distance learning/education, online learning/education, e-learning, and web-based learning are often used interchangeably. Distance education pertains to the use of one or more technologies to facilitate instruction between the learner and the instructor, who are separated from one another (Integrated Postsecondary Education Data System [IPEDS], n.d.). Technologies in distance education may include internet, one-way or two-way transmissions through open broadcasts, cable, fiber optics, and satellites, among other technologies (IPEDS, n.d.). Online education pertains to the teaching and learning delivered through computers "via a web-based system, or a specific course management system" (Hollis & Madill, 2006, p. 62). E-learning and web-based learning use electronic technologies and the World Wide Web to deliver the content of curriculum (McKimm et al., 2003). In this paper, the term online learning will be used for consistency.

Taking a broader perspective, the history of online education may be traced back to the 1980s when the first completely online course focusing on adult education started in 1981 (Harasim, 2000). Online education was considered one of the first by-products of the inception of electronic mail, and online education's evolution was interwoven with the history of computer networking. The development of the World Wide Web in 1992 increased the accessibility of online education (Harasim, 2000).

The increasing number of new communication strategies, technologies, and other innovations (e.g., the Internet) greatly shaped the creation and proliferation of online programs (IPEDS, n.d.). A notable impact of online learning in education is reflected in the creation of online courses and programs in traditional "brick and mortar" institutions and the creation of institutions solely to provide online courses and programs. Online education is becoming mainstream (IPEDS, n.d.). In terms of enrollment, an increasing number of distance education enrollments, including online learning, was noted in both undergraduate and graduate programs from 2012 through 2016 (Seaman, Allen, & Seaman, 2018).

There is an increasing amount of literature focusing on the advantages of and best practices related to online education. However, a review of the literature conducted by the authors reveals that little is known about the historical development of online learning at various levels of occupational therapy education (e.g., master's level, entry-level doctorate, postprofessional doctorate) and how online occupational therapy programs have evolved.

Hall (2013) asserted that understanding the practice of professions as they develop over time and the factors associated with the changes in practice and thinking equip occupational therapists in undertaking new challenges and in transforming the profession. Learning about the educational practices of the profession with a historical perspective also allows for a better comprehension of what, how, and why changes occur or do not occur. Historical inquiry studies enable occupational therapy practitioners to understand how the profession has been shaped over time and how professional paradigms shift and evolve (Mahoney, Peters, & Martin, 2017). With the understanding of earlier works and how the profession evolved in response to societal influence and trends, historical studies allow occupational therapy practitioners to have a stronger learning foundation (Mahoney et al., 2017). For example, the

Medicare Cap implemented in the mid-1990s reduced the enrollment of students in occupational therapy programs (Trujillo, 2007). The drive to increase enrollment resulted in the exploration of ways to improve access to education, particularly for those potential enrollees who were far from the campus area. As a result, distance education was tapped as a potential mode of instructional delivery (Trujillo, 2007). From these events, we can ascertain that the understanding of the historical perspective of the past potentially guides current and future decisions. Using a historical lens "enables us to look at our own circumstances with sharper vision, alert to the possibility that they might have been different, and that they will probably turn out differently in the future" (Tosh, 2008, p. 28).

Considering the limited availability of literature describing the historical development of online occupational therapy education and the potential advantages of undertaking a historical inquiry, the purpose of this paper is threefold:

1. To formally document the evolution of online education in occupational therapy guided by the available resources (i.e., literature review and interviews).
2. To describe the factors which intersected in the shaping of online occupational therapy education.
3. To contribute to the body of knowledge that may become a basis for facilitating learning and understanding in the development of online occupational therapy education over time.

Method

This project employed a historical inquiry approach using instructors' perspective as a lens. In this historical inquiry, there was a need to understand the evolution of online occupational therapy education from the perspective of instructors who developed online programs and experienced and witnessed the changes related to online education. The authors also wanted to ascertain interpretations from instructors to contextualize the changes when they occurred. Portney and Watkins (2015) described the use of historical research in reviewing events, documents, literature, and other information sources. The review process facilitates an understanding of past events, contextualizes current events, and assists in planning for the future (Portney & Watkins, 2015). In this project, the authors employed a process similar to the historical documentary research guidelines described by Dunne, Pettigrew, and Robinson (2016). The process included: (a) choosing a topic, (b) sourcing documentary evidence, (c) assessing quality, and (d) understanding the meaning of historical information (see Figure 1).
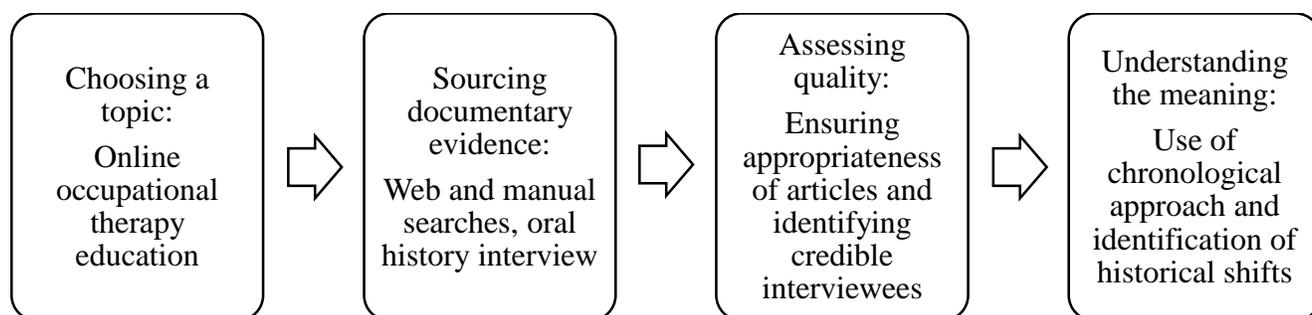

Figure 1. The study's inquiry process.

The authors performed a systematic literature search for articles from databases and websites including MEDLINE, CINAHL, OTSeeker, and ERIC. The authors used key terms such as "online education," "online learning," "e-learning," "web-based learning," "distance education," and "online

occupational therapy." To supplement the database search, a manual search was done through hand-searching and by perusing reference lists. Dissertation and thesis papers were excluded from the review process. To focus on the early traces of online occupational therapy education, the articles and programs considered in this paper are from the 1980s, when the first completely online course was introduced, through 2010. The authors read the abstracts of the articles retrieved and then analyzed the full-text of articles relevant to this project. The first author interviewed some of the early adopters in occupational therapy online education. A snowball sample was used and resulted in interviews with Dr. Brenda Coppard from Creighton University, Dr. Karen Jacobs from Boston University, and Dr. Judith Parker from University of the Sciences. These early adopters developed online entry-level and/or postprofessional occupational therapy programs. We conducted member checking with the interviewees to ensure trustworthiness of information.

Analysis

The authors collated information from the articles and from the interviews. The information was organized and analyzed to ascertain key events and the progression of online education in occupational therapy in a chronological fashion. Information from the literature review and interviews were compared. Analysis was also done to elucidate changes and shifts, or a lack thereof, and factors contributing to the development of online education.

<div align="center">

Results

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The literature search yielded 31 potentially relevant articles after removal of duplicates, and 15 articles were considered for the final report. Because of the limited amount of literature published regarding preliminary information on the historical development of online education, this paper may not fully represent the entire historical development of online occupational therapy education. With the recognition that there may be different perspective of history, the authors do not claim that this paper's perspective and interpretation of facts and accounts represents a definitive historical analysis of online education in occupational therapy.

Early Traces of Online Education in Occupational Therapy

Early traces of distance education in occupational therapy were noted in the 1980s when the Medical University of South Carolina (MUSC) in the US partnered with Dalhousie University (DAL) in Canada to deliver courses in graduate occupational therapy using audio teleconferencing (Mitcham & O'Shea, 1994). The graduate distance occupational therapy program launched by MUSC and DAL was reflective of the universities' belief in collaboration and technology's ability to advance the occupational therapy profession. In the 1990s, accounts were found regarding the development and implementation of online courses in some occupational therapy programs (see Figure 2). Some earlier known online courses were part of entry-level master's degree programs (Jedlicka, Brown, Bunch, & Jaffe, 2002; Simons, Baron, Knicely, & Richardson, 2002). The basis for the development of online programs was improving access to education, offering flexibility, and serving the underserved areas (Jedlicka et al., 2002; Li-Tsang & Weiss, 2003). At the postprofessional occupational therapy doctorate level, the first known program offered with an online component, particularly a hybrid format, was at Nova Southern University (Estes, Dunbar, & Carrasco, 2019). The hybrid program at Nova Southern University was developed to cater to occupational therapists who were not able to relocate due to family and employment factors (Estes et al., in press). Creighton University was another early adopter of online education and began a postprofessional occupational therapy doctorate program using a hybrid format in 2005 (B. Coppard, personal communication, June 16, 2018).

Funding was crucial in the institutionalization of online programs. Creighton University's online postprofessional occupational therapy program emanated from a grant received to develop a distance pharmacy program (B. Coppard, personal communication, June 27, 2017). The University of Missouri also received internal funding which allowed the development of computer-mediated courses (Stancliff, 1997). The development of online occupational therapy courses and programs continued to grow henceforth. Since the development of online occupational therapy education, a proliferation in the number of programs using online technologies occurred.
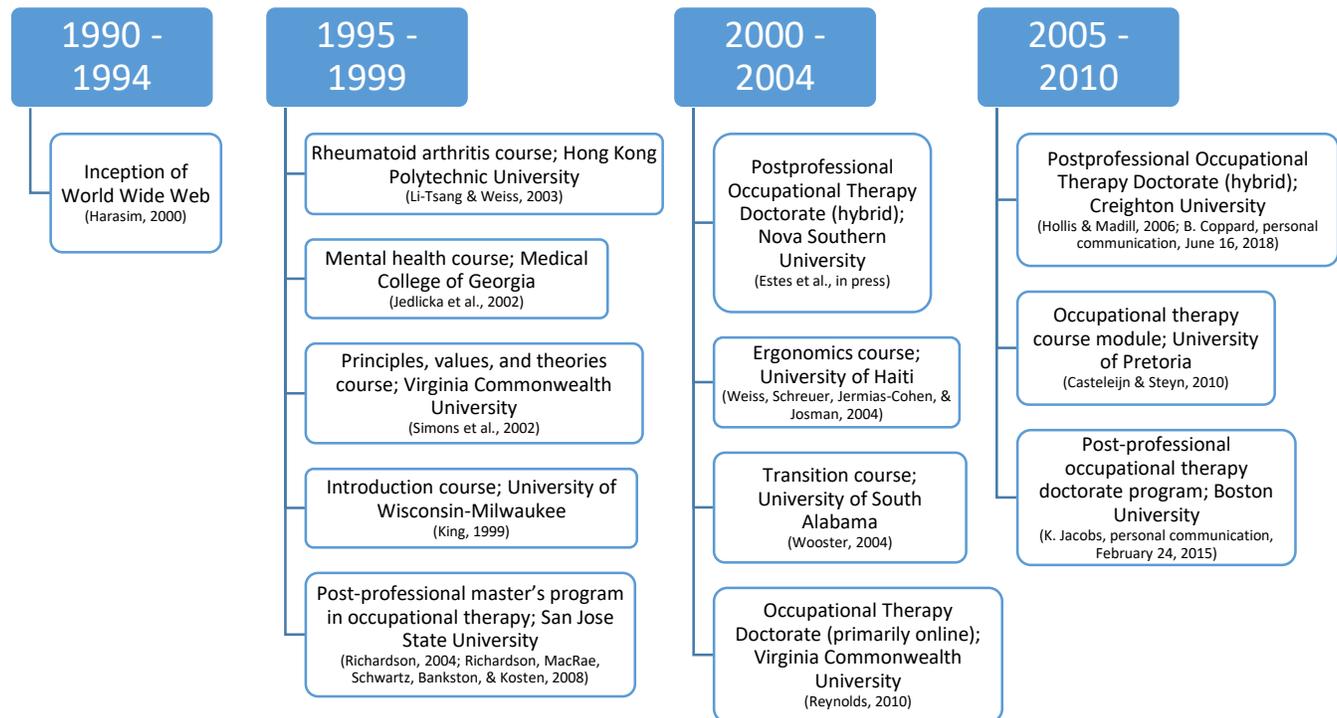
1990 - 1994	1995 - 1999	2000 - 2004	2005 - 2010
Inception of World Wide Web (Harasim, 2000)	Rheumatoid arthritis course; Hong Kong Polytechnic University (Li-Tsang & Weiss, 2003)	Postprofessional Occupational Therapy Doctorate (hybrid); Nova Southern University (Estes et al., in press)	Postprofessional Occupational Therapy Doctorate (hybrid); Creighton University (Hollis & Madill, 2006; B. Coppard, personal communication, June 16, 2018)
	Mental health course; Medical College of Georgia (Jedlicka et al., 2002)	Ergonomics course; University of Haiti (Weiss, Schreuer, Jermias-Cohen, & Josman, 2004)	Occupational therapy course module; University of Pretoria (Casteleijn & Steyn, 2010)
	Principles, values, and theories course; Virginia Commonwealth University (Simons et al., 2002)	Transition course; University of South Alabama (Wooster, 2004)	Post-professional occupational therapy doctorate program; Boston University (K. Jacobs, personal communication, February 24, 2015)
	Introduction course; University of Wisconsin-Milwaukee (King, 1999)	Occupational Therapy Doctorate (primarily online); Virginia Commonwealth University (Reynolds, 2010)	
	Post-professional master's program in occupational therapy; San Jose State University (Richardson, 2004; Richardson, MacRae, Schwartz, Bankston, & Kosten, 2008)		

Figure 2. Timeline of examples of early known online courses and programs in occupational therapy.

The review of the development of online education in occupational therapy in the past decades revealed three shifts: (a) a shift in perceptions among occupational therapy constituents, (b) a shift in mode of instruction, and (c) a shift in instructor and student roles.

Shift in Perceptions

Online occupational therapy education was initially viewed with reservation (Stancliff, 1997). In 1997, the AOTA posed a question during an annual conference on whether distance learning was appropriate for and viable in the occupational therapy profession (Stancliff, 1997). At the conference, some attendees expressed excitement for this novel means of teaching, while others conveyed hesitations regarding its applicability to teaching the psychomotor domains of the occupational therapy curriculum. Teaching the collaborative nature of patient management and the use of touch in intervention strategies via a computer-mediated learning environment remained a complex issue. Steward (2001) reported some instructors were apprehensive because online education may promote superficial understanding of occupational therapy. Furthermore, administrative personnel in some institutions equated online education with poor quality education; thus, such institutions were hesitant to start online programs (K. Jacobs, personal communication, March 24, 2015).

While some occupational therapy practitioners expressed hesitance toward online education, others deemed its inception in the profession as necessary (B. Coppard, personal communication, June 27, 2017; Hollis & Madill, 2006; Rogers, Mulholland, Derdall, & Hollis, 2011; Steward, 2001). Online education's capacity to bridge differences in time and distance between instructors and learners appealed to many occupational therapy students and educators. Some viewed the offering of online education as a way to promote justice by providing access to students who did not have the time and/or resources to participate in a formal education in a face-to-face format in a particular geographical location (B. Coppard, personal communication, June 27, 2017). Online education allowed working occupational therapy professionals to study without having to relocate and/or stop working (B. Coppard, personal communication, June 27, 2017; Hollis & Madill, 2006; Rogers et al., 2011; Steward, 2001). The flexibility of online postprofessional education permitted busy and working professionals the convenience and ability to advance their degrees. Online learning also reduced education costs for students because it minimized, if not eliminated, the need for students to relocate to access education (Steward, 2001). On a larger scale, the inherent capacity of online education to reach instructors and learners across the world allowed international collaborations among students and teachers, and thus promoted globalization in the profession (Aldrich & Johansson, 2015; Farber, 2013; Hollis & Madill, 2006; Steward, 2001). Farber (2013) purported that online education provided more opportunity to train occupational therapists to become leaders and clinicians with advanced practice in the growing profession. Online education improved accessibility to occupational therapy courses and curricula, facilitated access to advanced degrees, and allowed richer connections among occupational therapy researchers, instructors, students, clinicians, and stakeholders. The acceptance toward online learning in occupational therapy became more evident in recent years as evidenced by an increased number of online occupational therapy programs and courses across entry and postprofessional master's and doctorate levels and increased growth in the number of enrollees in online occupational therapy programs (AOTA, 2017; Mu, Coppard, Bracciano, & Bradberry, 2014; Parker & Burkhardt, 2010).

Shift in Mode of Instruction

A shift from the use of traditional face-to-face classroom teaching to the use of technology-mediated teaching became one of the key features of online education in occupational therapy. Moreover, online occupational therapy courses varied in terms of how they were delivered. The use of technology in online education impacted the teaching and learning process. Jacobs (personal communication, November 8, 2017) ascertained the biggest change in online education was in technology. The technology used in online education has greatly evolved in the past 20 years (K. Jacobs, personal communication, November 8, 2017). Coppard (personal communication, June 27, 2017) recalled faculty at Creighton University initially had to learn to design web pages for the first generation of online courses by becoming a certified online instructor with the campus' information technology (IT) personnel. In more recent years, online teaching was delivered using learning management systems (LMS) such as Blackboard® and WebCT (Parker & Burkhardt, 2010). Coppard (personal communication September 15, 2017) ascertained LMS's role as a medium for discussion, assignment submission, presentations, and quizzes/tests, among others. Through the LMS, parity of pedagogical strategies between online and face-to-face learning is possible (B. Coppard, personal communication, September 15, 2017). Other technology platforms like blogs, wikis, podcasts, iPad applications, and interactive gaming (e.g., Wii) were also used to facilitate teaching and learning (Bondoc, Powers, Herz, & Hermann, 2010). These interactive tools involved physical, cognitive, psychological, and social

domains. Other tools that were primarily developed for educative purposes were Wimba, Tegrity, and Illumminate (Parker & Burkhardt, 2010). The sophisticated nature of technological tools showed the depth and breadth of interactions and discussions these tools present in online education. Synchronous and asynchronous course discussions used online technology tools (Rogers et al., 2011). The evolution of technology in online education fostered a student-friendly learning environment and technology made learning meaningful (K. Jacobs, personal communication, November 8, 2017). The use of online tools and the nature and inherent characteristics of online delivery required different demands for institutions, instructors, and students.

Shift in Roles of Instructors and Students in Online Education

The roles, responsibilities, and expectations for instructors and students in online education were crucial in optimizing success. In a traditional classroom, the instructor was the "sage of the stage" (Hollis & Madill, 2006, p. 67) who led and controlled the teaching-learning experience (Harasim, 2000). Instructors in a classroom setting were dominant in the exchange of knowledge (Farber, 2013). The instructor's role changed in online learning from being the center of the teaching-learning process to facilitating the process (Farber, 2013; Hollis & Madill, 2006; Richardson, 2004) or a "guide on the side" (Hollis & Madill, 2006, p. 67). In contrast to the classroom setting, the students' role in online education became active and the student was expected to have a greater involvement and accountability in the exchange of knowledge. Students had high control of their learning and the pace of learning in online education. Harasim (2000) noted that students' level of participation in online learning was high as exhibited by a large number of student responses in the discussions. Indeed, notable changes in the dynamics of the teaching and learning process in online education transpired.

Online Programs in Occupational Therapy

The initial stages of development and implementation of online programs in the profession were challenging. To illustrate this, Jacobs (personal communication, February 24, 2015) described her experience in developing and implementing the online occupational therapy postprofessional doctorate at Boston University in 2007. She expressed that some of the decisions regarding Boston University's online program development were based on "gut feel" and "trial and error." Jacobs (personal communication, February 24, 2015) reasoned this was primarily due to the scarce amount of evidence regarding best practices in occupational therapy online learning in the beginning. One of the greatest challenges Jacobs (personal communication, February 24, 2015) identified was getting faculty members on board. Faculty members at Boston University were hesitant to use technology and apprehensive about the amount of time and work involved in transitioning from a traditional teaching method to an online format (K. Jacobs, personal communication, February 24, 2015). Farber (2013) reported the same experience and credited the digital phenomenon for the hesitance of faculty members, as current students were more familiar with technology than the faculty members. Stanton (2001) also conveyed negative perceptions regarding online learning in occupational therapy, which posed a challenge in the development and implementation of online programs in the profession.

The negative perceptions toward online learning in terms of its importance and effectiveness may have affected student recruitment in the early years of occupational therapy online programs. The negative perceptions inhibited, to a certain degree, the active involvement of faculty members and institutions in developing and implementing online occupational therapy courses and programs. These challenges resulted in the implementation of stop-gap quality measures (e.g., training of instructors in

online teaching, partnering with IT personnel, conducting studies) (B. Coppard, personal communication, June 27, 2017; K. Jacobs, personal communication, February 24, 2015).

The noted proliferation of online education in the more recent years may be attributed to: (a) the expansion of existing and the invention of new technology (Jacobs, Doyle, & Martin, 2013; Jedlicka et al., 2002; Mu et al., 2014; Parker & Burkardt, 2010), (b) the increased student demand for online programs (Hollis & Madill, 2006; Jacobs et al., 2013), and (c) the drive for increased revenue among institutions (Hollis & Madill, 2006). An increased number of options for online delivery of occupational therapy courses was noted as technology advanced. More students sought online programs that matched their learning needs and suited their personal schedule (Hollis & Madill, 2006). More occupational therapy institutions offered online programs in entry- and postprofessional level education in conjunction with their campus-based programs (i.e., hybrid). As the quantity of online programs increased, the concern about ensuring and improving quality became more pressing and resulted in a need to assess program outcomes.

Discussion

This paper aimed to formally document the early traces of online occupational therapy education, describe the factors that interplayed in the development of online occupational therapy courses and programs through the years, and contribute to the body of knowledge related to online occupational therapy education. The first known online occupational therapy courses were a part of entry-level master's programs (Jedlicka et al., 2002; Simons et al., 2002) and were offered to improve access in occupational therapy education and flexibility of learning. The findings revealed that online education in occupational therapy has been a product of both external (e.g., innovation of new technology and status of online education in other fields) and internal factors (e.g., increased need for national and international collaborations and demand for accessible occupational therapy programs).

The evolution of occupational therapy online education has been reflected in the subject of inquiry in the literature and in public discourse. The increasing amount of available literature regarding online occupational therapy education has also been a testament to the shaping of online education in the profession over the years. The AOTA annual conference discussion in 1997 revolved around the question of what the possibilities were for online education to the profession. In 2010, the subject of the discussion shifted to how to use online education in the most effective way possible in occupational therapy (Burkhardt, 2010). The shift in focus shows the recognition of the value of online learning. The initial body of literature dealt with mere visions of how online education may be an effective means of teaching in occupational therapy (Stancliff, 1997; Stanton, 2001; Steward, 2001). There were arbitrary opinions regarding its effectiveness. In more recent years, the focus has shifted to outcomes, best practices, and experiences (Farber, 2013; Mu et al., 2014).

A development in the use of technological tools from fiber-optic systems and video teleconferencing to more sophisticated tools, such as LMS, web-based media, wikis, blogs, and interactive gaming, facilitated the evolution of online occupational therapy education (Bondoc et al., 2010; Parker & Burkardt, 2010; Stancliff, 1997). With the shift in the nature of the technology used in online education, a shift in instructor and student roles was also noted. The instructor shifted from dominating the teaching and learning dialogue to a facilitating role. The shift potentially bestowed greater responsibility on the student in the online course. Coppard (personal communication, June 27, 2017) noted students in online education are expected to answer questions in discussions and are expected to be prepared in discussions; the students could no longer hide and be passive learners. Online

education allowed students from different countries to access occupational therapy programs from a distance, which resulted in a more diverse population of learners. At Boston University, a diverse community of learners made course content on cultural sensitivity paramount (K. Jacobs, personal communication, November 8, 2017). For example, in one of the courses at Boston University, Codes of Ethics from other countries besides the United States were added to foster discussion on being a global citizen.

Another notable change was the perception toward online learning. Harasim (2000) discussed that the shift in attitude toward online education was profound. At present, people are positive toward online learning programs compared to when the programs first debuted. In occupational therapy, Jacobs (personal communication, February 24, 2015) noted administrative personnel, instructors, and students now have a more positive outlook toward online learning and its capacity to provide quality education. Jacobs (personal communication, November 8, 2017) reported strong institutional support toward the online postprofessional doctorate in occupational therapy programs at Boston University. The strong support from the institution allowed program changes (e.g., admission policy changes, such as waiving the Graduate Record Examination if a student has a grade point average of 3.0 or greater, presence of merit-based scholarships), which made the online occupational therapy program accessible to students all over the world. Rogers Mulholland, Derdall, and Hollis (2011) reported greater openness from stakeholders in discussing online education's potential in occupational therapy and ways it can be improved. The shift in the perception consequently resulted in a better appreciation of online learning as exhibited by the continued growth of the number of students enrolling in online programs (Mu et al., 2014; Parker & Burkhardt, 2010).

Implications for Occupational Therapy Education

Online occupational therapy programs continue to grow and expand in proportion to the emergence of new teaching-learning innovations, the exponential rise of modern technological advancements, and demands in and for occupational therapy education. Jacobs (personal communication, February 24, 2015; November 8, 2017) believes online education will remain the trend with the access to it being limitless. Parker Kent (personal communication, February 23, 2015) cautioned the profession to check quality over quantity in offering online programs. Coppard (personal communication, June 27, 2017) offered recommendations related to online occupational therapy education. A need exists for assessments to ensure the quality of online occupational therapy programs by providing evidence of adherence to best practices in online teaching. Occupational therapy instructors would benefit from creation of open-access repositories of online teaching and learning assignments, experiences, and assessment materials (B. Coppard, personal communication, June 27, 2017). The findings of this project revealed a continued growth in online occupational therapy programs and discourse relating to quality assurance and that online repositories are warranted.

Conclusion

Online education in occupational therapy, as people know it today, is a product of technological advancements and the varying and growing needs of the profession. The development of online occupational therapy education has been facilitated by the work of visionary occupational therapy educators and the emergence of professional literature addressing online education's benefits. Technology, mode of instruction, and virtual instructor and student roles have shaped online occupational therapy education. Despite known challenges, online occupational therapy education

continues to flourish. Online occupational therapy education's potential to deliver quality outcomes remains promising, but continued efforts to ensure quality are also necessary.

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