Chapter 20

Continuity and Developments in Terms of Challenges, Opportunities, and Trends in Quality K–12 Online Environments

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ABSTRACT

This chapter provides updated background information related to K-12 online education, ranging from definitions to benefits and challenges, based on an earlier version of the document. Comparative analyses of the virtual learning landscape reveal the increasingly complex parameters by which it could be evaluated, including the range of programs, service provider types, approaches to blended learning, kinds of instruction delivery, as well as levels of interaction within cyberspace. A theoretical framework introduced in the previous version of the chapter continues to identify academic programs/curricula, student support services, and virtual program/school administration as categories that connect the relevant literature review to recommendations for future research intended to inform policy-setting efforts aimed at supporting the further development of high-quality K-12 online environments.

INTRODUCTION

Online learning in the world of K–12 education has grown substantially over a rather short period of time. For instance, virtual schools have gained public interest and recognition since the first one was established in 1996. A decade later, Michigan became the first state to require that each student should have exposure to e-learning prior to graduation from high school (DiPietro, Ferdig, Black, & Preston, 2008). By 2013, 24 states and Washington, DC had blended schools, while entirely online, multi-district

schools in 30 states served more than 310,000 students. At the same time, more private/independent schools included supplemental online and hybrid classes (Watson, Murin, Vashaw, Gemin, & Rapp, 2013). During the 2013–2014 school year, state virtual schools enrolled 740,000 students (Archambault & Kennedy, 2017). According to a detailed analysis of the evolution of K–12 online participation for the 2014–2015 academic year, approximately 2.7 million students signed up for supplemental instruction programs, representing 4.6 million individual online course enrollments (Gemin, Pape, Vashaw, & Watson, 2015). For the same school year, there were 275,000 students enrolled in cyber charter schools, supported by 3.3 million individual course enrollments. Though more difficult to quantify, hybrid school enrollment was included in Ambient Insights's (2014) estimation of students participating in K–12 online and blended learning in the United States. As of the 2015–2016 academic year, around 5 million students, roughly 10% of the K–12 students in the U.S. took at least one Web-based class (Besnoy, 2017).

Over the course of last century, high school and college retention and graduation rates have increased gradually, in spite of occasional fluctuations. As societal needs change, schools have to keep up the pace of innovation, especially in terms of computer technology. There is increasing pressure on K–12 education to reform teaching and learning in ways that accommodate the development of 21st century skills required for high school and college graduates to be competitive in a global workforce market. Decision makers and stakeholders in education are taking into account the current achievement gap demonstrated by American students, reduced funding opportunities, the digital divide impacting students across the country, and an expected teacher shortage. Under these circumstances, online education has become a viable set of models for instruction delivery. While the field is still refining its operational terms (e-learning, virtual schooling, digital instruction, etc.), its potential as "disruptive innovation" (Horn, 2010, p. 19) should be backed up by evidence-based research on the actual use of technology in the classroom along a continuum of types of instructional settings ranging from traditional, face-to-face to hybrid/blended to entirely Web-based. While there is increased legislative support for virtual learning, policy-setting structures need data designed to indicate the need for support in terms of curricula, staffing, administration, infrastructure, accountability requirements, professional development, et cetera.

While the current research on the effectiveness of e-learning is still insufficient, there are indications that it promotes greater access to equitable, high quality, cost-efficient learning opportunities to students that may not otherwise benefit from a wider range of formal education options. The computer technologies used in virtual settings have also evolved to become more student-centered and interactive, while supporting teachers in structuring their courses better. As the needs, interests, and characteristics of students change over time, online education is expected to play an important role in providing specialized services that are at least on par with traditional, face-to-face schools. At the same time, the shift in learner profile accommodated by e-learning implies enhanced reflection and autonomy, as students assume more responsibility in instructional sequences they are engaged in. At the same time, the roles online teachers play change accordingly, as they become more facilitating as designers, motivators, and trouble-shooters in virtual learning settings.

As the field of online learning continues its formative stage, there are several drawbacks that have been referenced by several research reports and policy briefs. On the one hand, the initial cost of setting up a high-quality virtual environment, coupled with the requirements of scaling up to meet a wide range of student needs, led to the redefining/restructuring of some initiatives. As various models of e-learning have been proposed, the need for structure and guiding standards emerged. Efforts were made to investigate how the effectiveness of traditional, face-to-face instruction could translate into equally effective online delivery systems. The quality of curricula and their associated pedagogies, as well as

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