Chapter 75
Challenges, Opportunities, and Trends in Quality K–12 Online Environments

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ABSTRACT

This chapter provides background information related to K-12 online education, ranging from definitions to benefits and challenges. An in-depth analysis of the virtual learning landscape reveals the multitude of dimensions 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 proposed theoretical framework identifies 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, and Preston, 2008). Today 24 states and Washington, D.C. have blended schools, while entirely online, multi-district schools in 30 states serve more than 310,000 students. At the same time, more private/independent schools include supplemental online and hybrid classes (Watson, Murin, Vashaw, Gemin, and Rapp, 2013). 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 gradu-

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ates 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) 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, etc.

While the current research on the effectiveness of e-learning is still insufficient, there are indications that is 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 is in 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 some 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 pedagogy, the level of support for teachers, students, and parents, coupled with the multi-faceted administration of hybrid/blended courses, programs, or schools developed into topics of conversation about e-learning that are dealt with in this chapter.

Continuing the line of inquiry into what constitutes high quality online education is intended to have significant implications for future policy-setting efforts. The chapter proposes a framework within which the perceived benefits and challenges of e-learning come together to inform how institutional technology plans connect the local context, in terms of academic programs, student support services, and administration, with state, national, and global levels where online students can prove the quality of their education.

BACKGROUND

The correlation between educational opportunities for all students and their academic achievement supports the national economic development. According to a seminal study by Goldin and Katz (as cited by Picciano and Seaman, 2010), the American economy's unprecedented growth in the 20th century is in part due to increasing numbers of students being able to complete cycles of formal education, especially secondary