

Chapter 10

Learning Theory and Online Learning in K–12 Education: Instructional Models and Implications

Alex Kumi-Yeboah
University at Albany – SUNY, USA

ABSTRACT

Several questions need to be asked about how the applications of learning theories in online learning and how it impacts student learning. Online learning has the ability to promote rapid growth of student academic performance using instructional strategies such as differentiated instructions to meet the specific needs of students. However, less is known about the integration of learning theory and online learning in K-12 schools and its impact on student learning. This chapter seeks to demonstrate the integration of learning theories, online learning and its effects on student academic performance. In this chapter, researchers trace the trend of online learning in K-12 schools, discuss how instructional models are used to promote online learning in K-12 education, and provide discussion on the prospects and challenges facing online learning in the United States. Recommendation for future studies and conclusion are discussed.

INTRODUCTION

Online learning is a form of distance education in which all instruction and assessment are carried out using online, Internet-based delivery (Picciano & Seaman 2009; U. S. Department of Education, 2007). It includes teacher-led instruction and resources designed to instruct without the presence of a teacher in the classroom. Learning and teaching in an online environment are, in many ways, much like teaching and learning in any other

formal educational context. Similarities include: learners' needs assessed; content is negotiated or prescribed; learning activities are orchestrated; and learning is assessed (Anderson, 2004). Institutions can use online learning to shape the 'space' and influence learner use.

According to Wicks (2010), about 1.5 million students enrolled in one or more online courses in the 2010 school year in the United States. It is estimated that about 37 percent of school districts in the United States have students tak-

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ing technology-supported, distance education courses during school 2004/2005 (Zandberg & Lewis, 2008). It should be noted that as of 2012, Alabama, Florida, and Michigan offered full or part-time delivery options to students in grades K-12 (Watson et al., 2010). The National Center for Education Statistics (NCES, 2003) reports that about 62.6% of K-12 students between age groups 3-14, and 72.2% between age groups 15-19, and 59.6% between age group 20-24 have access to Internet.

Increased student population in K-12 schools has created financial constraints for most school districts to cater to the needs of all students; thus, these schools have to find alternative ways to reduce educational costs. This educational environment has increased the desire for online/virtual education for K-12 schools, helping to ease the financial burden as well as reduce problems related to growth in student enrollment (Watson, 2010). Online learning has become popular because of the following reasons: (a) increasing the availability of learning experiences for those who cannot or choose not to attend traditional schools; (b) assembling and disseminating instructional content more efficiently; and (c) increasing student-instructor ratios while achieving learning outcomes equal to those of traditional classroom instruction (Riel & Polin, 2004; Schwen & Hara, 2004). Proponents of online learning argue that it provides students individualized and differentiated instruction with immediate formative feedback about student's performance (Dennen, 2005). This chapter explains the integration of learning theories and online learning and its impact on student learning. In this study, researchers will trace the trend of online learning in K-12 schools, discuss how instructional models are used to promote online learning in K-12 education, and provide discussion on the prospects and challenges facing online learning in the United States. Recommendation for future studies and conclusion will be discussed.

Trends of Online K-12 Education in United States

According to Horn and Staker (2011), about 50 percent of all high school courses will be delivered in an online format by 2019. The International Association for K-12 Online Learning (2012) report estimates that about 275,000 students nationwide are enrolled in full-time, publicly funded virtual schools with a growth trend of enrollment of about 30 percent a year. As of 2012, 27 states have state virtual schools with 740,000 course enrollments in 2012-2013, and 30 states plus Washington DC have at least one full-time online school operating statewide in the 2013-2014 school year (iNACOL, 2013). According to the International Association for K-2 Online Learning (iNACOL), there were 310,000 students enrolled in online programs in the states that serve students from across districts in the 2012-13 school year, which is an increase of 13 percent from the previous year.

According to Keeping Pace (2012), currently 32 states and the District of Columbia offer virtual public schools with 40 percent more enrollments than in the previous year with most of the growth attributed to Florida and North Carolina, which have been aggressively pushing their programs. For example, Florida alone now records more than 220,000 enrollments in its virtual schools. Florida is one of only four states requiring students to take an online course in order to graduate, and allows students to go beyond their local areas and pick online courses from other districts across the state (iNACOL, 2012). According to Watson (2010), individual choice for online courses is likely to increase in the years ahead through ambitious state programs like the one established in Louisiana, as well as through the increasing array of options in existing state and district programs. For example, during the 2009-2010 school year, there were 1,816,400 enrollments in distance education. There are currently 27 state virtual schools, and fulltime online schools in 31 states and Washington, D.C.

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