Chapter 27
Designing Engaging Online Environments:
Universal Design for Learning Principles

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ABSTRACT

Engagement in learning is critical to students' achievement of meaningful learning outcomes. Educators often describe engagement as a multi component concept that involves emotional, cognitive, and behavioral domains. In an online environment, student engagement is challenging to achieve. Both synchronous and asynchronous instruction needs to be thoughtfully designed to engage students at a meaningful level. Moreover, within an online environment, some of the differences between the students from diverse backgrounds may be more challenging for the instructors to address and thus require an intentional and systematic approach. Universal Design for Learning (UDL) is an instructional design framework that is based on a notion that all students are varied in their learning needs and therefore instruction needs to be flexible to ensure learning of all. This chapter will examine the construct of engagement, focus on learner variability, and offer practical instructional design solutions based in the framework of UDL.

INTRODUCTION

Engagement in learning is critical to students achieving meaningful learning outcomes. The concept of engagement has received a great deal of attention in the past two decades (Christenson, Reschly, & Wylie; 2012; Finn & Zimmer, 2012; Fredricks, Blumenfeld, & Paris, 2004; Hollingshead, Carnahan, Lowrey, & Snyder, 2017; National Research Council and the Institute of Medicine, 2004; Skinner & Pitzer, 2012). Educators often describe engagement as a multi component concept that involves emotional, cognitive, and behavioral domains. In-depth examination of emotional, cognitive, and behavioral components reveals that teachers must be attentive to each one in order to successfully engage students in instruction (Finn & Zimmer, 2012; Fredricks et al., 2004; Hollingshead et al., 2017; Skinner & Pitzer, 2012).

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In an online environment, student engagement may be challenging to achieve. Both synchronous and asynchronous instruction needs to be thoughtfully designed to engage students at a meaningful level. Moreover, within an online environment, some of the differences between the students which are due to their diverse backgrounds may be more challenging for the instructors to address and thus require an intentional and systematic approach. Universal Design for Learning (UDL) is an instructional design framework that is based on a notion that all students are varied in their learning needs and therefore instruction must be flexible to ensure learning of all (Meyer, Rose, & Gordon, 2014; Rose & Meyer, 2000). At the core of the variability of the learners are the differences caused by racial, linguistic, religious, cultural, sexual, and ability differences. Flexible instruction designed within UDL framework ensures that learners have multiple means to engage in learning, are given the information and content instruction through multiple modalities, and have an opportunity to demonstrate their learning via multiple means (see http://www.udlcenter.org/aboutudl/udlguidelines).

This chapter will provide the readers with a rich description of the concept of student engagement and an understanding of the underlying challenges to engagement within online environment. Moreover, the chapter will explore the variability of the learners and the importance of designing online instruction utilizing culturally responsive approach. Universal Design for Learning framework will be described in detail to provide a systematic and intentional approach to designing engaging online environments for students from a variety of diverse backgrounds and with varied learning needs. Finally, the chapter will provide specific strategies and ideas for designing online instruction utilizing UDL framework.

BACKGROUND

Online learning is becoming an increasingly popular option for delivering post-secondary education. In fact, Allen and Seaman (2010) reported a 21% increase in enrollments in online courses between 2008 and 2009. This increase corresponds to an overall increase in institutions of higher education offering online learning options which progressed from 34% in 1997 (see Rao & Tanners, 2011; Wirt et al., 2004) to 66% by 2007 (see Parsad & Lewis, 2008; Rao & Tanners, 2011). Online learning is defined as "teacher-led education that takes place over the Internet, with the teacher and student separated geographically" (Watson, Murin, Vashaw, Gemin, & Rapp, 2011, p. 12). Online instruction can be delivered synchronously, asynchronously, or via a hybrid model (Coy, Marino, & Serianni, 2014). A synchronous delivery usually means that an instructor and the students meet online at the same time utilizing video conferencing software. Asynchronous instruction consists of posted reading materials and assignments, pre-recorded lectures, and access to additional resources, like video and audio recordings (Coy et al., 2014). In a hybrid model, both asynchronous and synchronous methods are combined (Allen & Seaman, 2010). In post-secondary settings, the asynchronous method for delivery of online instruction is the most commonly utilized (Setzer & Lewis, 2005).

Regardless of the online instruction delivery model, student engagement is critical for ensuring progress and meaningful learning outcomes (Appleton, Christenson, & Furlong, 2008). In research literature, engagement is defined as a complex construct consisting of multiple components: behavioral, cognitive, and emotional (Christenson et al., 2012; Fredricks et al., 2004; Hollingshead et al., 2017; Steinbrenner, 2015). Broadly conceptualized, behavioral engagement would entail students being physically oriented to the instructor and materials. Cognitive engagement typically consists of responding to directions and questions, processing information, and completing academic tasks. Lastly, emotional engagement em-