Chapter 22

Using Digital Tools to Foster Student Engagement Within the Universal Design for Learning Framework

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ABSTRACT

Students are diverse. They vary widely in their background knowledge, interests, languages, academic strengths, and learning needs. In order to retain these students, higher education institutions must create flexible and engaging learning environments. Universal design for learning (UDL) is a research-based framework used to guide the development of instructional goals, teaching methods, materials, and assessments to meet the needs of all learners. The three overarching UDL principles and corresponding guidelines are discussed as a framework for making decisions about integrating digital tools into teaching and learning environments. Examples of how the authors have used technology to meet the guidelines in higher education classrooms are provided.

INTRODUCTION

Today’s college students do not resemble the typical college students of the past. They are diverse in age, family, income, background, race, religious affiliation, sexual orientation, interests, strengths, and knowledge. Specifically, about 74% of current undergraduates have at least one non-traditional charac-

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teristic, such as paying for college themselves, having children, working full-time, being older, or attending school part-time (NCES, 2015). Zehner (2018) reports that 17.7% of undergraduates at large public research universities self-identified as having a disability. Furthermore, according to the United States Department of Education (McFarland et al., 2018), only 60% of students who started seeking bachelor’s degrees in 2010 graduated with a degree by 2016. While multiple factors interact to impede students from graduating, the authors posit that providing students with opportunities for flexible learning through the use of digital tools can help meet the needs of this diverse student body. Creating personalized, hands-on learning environments that enable students to apply knowledge and skills requisite for the discipline can enhance engagement and thus retention and completion.

While the growing availability of digital tools, in combination with the diverse needs of students, has made fostering student engagement more complex, the Universal Design for Learning (UDL) framework can serve as a guide to help educators navigate this increasingly complex process. By using the UDL framework to purposefully integrate digital tools in the classroom, educators from any discipline can foster collaboration and engagement as well as help their students develop a deeper understanding of course content. A UDL designed curriculum affords students with the opportunity to access resources, participate in their own learning, and express what they know via mitigating barriers to learning.

This chapter addresses how the UDL principles and guidelines provide a framework for utilizing digital tools to offer students multiple means of engagement, multiple means of representation, and multiple means of action and expression. Examples of technology activities used in higher education classrooms at both the graduate and undergraduate levels in teacher and counselor education are provided.

THE UNIVERSAL DESIGN FOR LEARNING FRAMEWORK

Universal Design for Learning (UDL) is a framework “to improve and optimize teaching and learning for all people based on scientific insights into how humans learn” (CAST, 2019, para. 2). UDL offers a guide for educators to follow in the development of instructional goals, teaching methods, materials, and assessments that meet the needs of all learners. Goals are defined as learning expectations that reflect the skills students need to master. Methods are the instructional strategies and techniques used to support student learning. Materials are the actual resources used to present content in an understandable and interactive way, and assessments are used to gather information about students’ knowledge and skills. The focus of the UDL framework is creating a curriculum that is responsive, student-centered, and relevant, and which allows students to demonstrate knowledge and skills in a flexible manner.

Using UDL to develop curriculum stems from the idea of universal design in architecture. The concept, created by architect Ron Mace, is defined as “the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design” (Center for Universal Design, 2008, para. 2). When using universal design to design buildings, architects consider all possible users before the construction of a building and make design decisions accordingly. Rather than having to retrofit a building after it has been constructed, accessibility features such as wide doorways, elevators, curb cuts and access ramps are present from the beginning. Just as curb cuts and elevators are beneficial to people with or without disabilities, a well-designed curriculum, accessible to all types of learners, enhances the learning environment for all students. Building flexible features into curriculum beforehand increases accessibility for all students.