Chapter 16
Instructional Design for Simulations in Special Education Virtual Learning Spaces

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ABSTRACT

Virtual learning environments provide new teachers with experiences to apply knowledge of learner differences to semi-authentic learning situations involving students with special needs, teachers, and parents. Instructional design provides a systematic process to document instructional designs in an undergraduate special education course, which has students apply universal design for learning principles. A variation of instructional design designed for teacher education, the teacher decision cycle, documents the teaching decisions behind the use of TLE TeachLivE to provide simulated experiences in virtual learning settings, as well as supporting activity structures. Implementation guidelines are provided.

INTRODUCTION

The instructional systems and technology field taps learning and instructional theories with technology tools to address complex educational challenges. This chapter uses instructional design (ID), a systems approach to integrating theoretical foundations and systems thinking, to document how virtual simulations in special education programs give students near-authentic experiences in special education settings. ID provides a systematic foundation for the analysis, implementation, and evaluation of teaching decisions. More pragmatically, this chapter assists educators in implementing simulation in virtual learning spaces based on student and program needs as the basis for teaching decisions. Furthermore, an ID process prompts educators to evaluate the implementation and provide feedback on future adjustments.

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What writers and researchers have documented in recent years is that to learn best today's students, the so-called digital natives, need to be engaged and that they are already mentally and physically equipped to accomplish the work (Prensky, 2001; Kelly et al, 2009; Tapscott, 2001). The overriding pedagogical approach to support these learners involves both solo and collaborative work, but performed in new virtual settings (Pearlman, 2010). For example, Lemke's (2010) cites three ways to support student engagement, including visualization, democratization of knowledge, and participatory learning. All three means are core foundations to the use of virtual learning environments, particularly for the learning of how to implement Universal Design for Learning principles by special and regular educatators.

This chapter proposes two benefits to readers. First, the chapter will summarize technology tool use in two types of virtual learning spaces; namely structured simulations using a popular simulation software and student peer simulations using video. Second, the chapter helps educators to systematically think through the use of these tools using instructional design. While there are many ID models, the systematic approach used here is a teacher decision cycle (Shambaugh & Magliaro, 2006), which prompts teaching decisions through the use of five questions:

1. Who are the students?
2. What are the learning outcomes (and program goals)?
3. How are those outcomes assessed?
4. What are the teaching options?
5. How does technology help instructors to re-think learning outcomes, assessment, and teaching?

The responses to these questions serve to document the thinking behind and the rationale for the use of the two simulation activities. This chapter encourages educators to use a systematic teaching decision process to provide a grounded approach for their teaching decisions (e.g., alignment of learning activities and learning outcomes). At the same time, a structured cycle of analysis, implementation, and evaluation activities contributes evidence for the meeting academic program goals; specifically, how an academic course meets program goals.

BACKGROUND

Educators are continually faced with the challenge of educating people to live in a world they themselves will not live in. Gardner (2007) provides a direction to educators by proposing five minds to cultivate in today's students. Three of these minds are cognitive, including disciplinary, synthesizing, and creating, minds that are the focus of STEM disciplines. The other two minds are the developmental accomplishments of respectful and ethical minds. Both Gardner and Pink (2006) remind us of the need to help young people master the "softer side" of cognition, that of design, story, symphony, and play. Building upon the learning of core content and foundational skills, the explicit recognition and articulation of knowledge and skills are specified in recent learning outcome efforts, such as The Partnership for 21st Century Skills (2003). If these five minds provide us with a big picture direction to education and there are frameworks for specific knowledge and skills development, then what learning environments support this scope of human development in the 21st century?