Chapter 2
3D Virtual Learning Environment for Acquisition of Cultural Competence:
Experiences of Instructional Designers

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ABSTRACT

As educational systems emphasize and experiment with forms of online and remote learning, it is increasingly important to investigate the cultural competence of instructional designers. This chapter addresses the experiences of instructional designers in a 3D virtual learning environment designed for development of cultural competence. Design-based research (DBR) and user experience (UX) methodologies were employed to explore experience of six instructional designers in 3D virtual environment. A taxonomy of experience (ToE) established by Coxon guided qualitative data collection and analysis. Through examples and data, the chapter emphasizes the necessity for instructional designers to keep in mind the challenge of cultural diversity in the backgrounds of students and their own, and bring guidelines and principles into culturally sensitive and responsive instructional design processes. The authors recommend four future research directions, including cross-cultural instructional designer competencies along with research into cultural personas, avatars, and guest-host relations.

INTRODUCTION

Research in face-to-face and online classrooms suggests that students who have diverse cultural backgrounds present learning challenges if instructional designers fail to design culturally sensitive learning environments (Au & Kawakami,1994; Gay, 2000; Capell, Veenstra, & Dean, 2007). With the pervasive

use of educational technologies, more and more online learning platforms have become easily accessible to global learners, often with diverse cultural backgrounds. How educational and instructional designers design curriculum and courses in VLEs to best facilitate learning is a popular focus of research (Allen & Seaman, 2013; Chen, & Oakley, 2020; Mohamed, Schroeder, & Wosnitza, 2014). With advanced learning technologies (ALTs) integrated into games, online platforms, and virtual reality (VR) systems, questions of cultural competence are intensified.

New technologies provide new affordances and options for instructional designers, and the complexity of design to accommodate learners' cultural differences increases. Research suggests the need for instructional designers to be more aware of and responsive to cultural complexity during the design process, and to prevent developing culturally blind systems or unintentionally exclude cultural nuances, which results in culturally homogeneous educational resources or VLEs (Chen, Mashhadi, Ang, & Harkrider, 1999; Kawachi, 2000; Bentley, Tinney, & Chia, 2005; Young, 2008). Shortcomings of affordances are made abundantly clear as instructors transform traditional material and resources into digital formats for remote learning during Covid-19. Naïve assumptions that remote learning merely necessitates conversion of material from analog to digital prevail as students counter with expectations and demands for cultural competence and empathy. Out of convenience, most instructional designers and educators prioritized limited VLEs (e.g., learning management system) or video conferencing systems (e.g., Zoom). For more complex remote learning, 3D virtual worlds nonetheless have great potential.

To contribute to research in this area, this chapter reviews research on the acquisition of cultural competence in education and explores six instructional designers' experiences in virtual world design. To elicit responses and insights, we used OpenSimulator, an open-source platform for hosting 3D virtual worlds and the metaverse. The design of the virtual world went through multiple design-based research (DBR) iterations and was used to develop healthcare students' cultural competence (Zhao, 2019). We recommend four future research directions, including cross-cultural instructional designer competencies along with research into cultural personas, avatars, and guest-host relations. Although since the late 1960s, "instructional design" (ID) has often been used interchangeably with "curriculum design," "educational design" and "educational technology," in this chapter ID refers to the design and construction of learning objects on a micro level and learning systems on a macro level (Geis & Klaassen, 1972; Laverde, Cifuentes, & Rodríguez, 2007; Nelson, 2013; Petrina, 2004).

BACKGROUND

This section presents a review of the literature regarding cultural considerations for instructional designers in VLEs. Culture shapes not only how people feel, value, think, and behave, but also how people learn. "Multiculturalism," "cultural diversity," and "cultural pluralism" have been researched for decades. Cultural differences in increasingly global learning environments are also a well recognized fact (Au & Kawakami, 1994; Biggs, 1990; Edwards, 2000; Mahbubani, 2002; Young, 2008). The premise of instructional design for student or user variation is that "different continents, nations, regions, and communities hold different cultural, mental and cognitive models— customs, manners and behaviours— that provide kaleidoscopic perspectives in the way people see, feel, understand, and connect with the world" (Cabrero, 2014, p. 247).

Addressing the needs of learners with culturally diverse backgrounds, instructional design processes have been comprehensively researched. Research indicates that the more emphasis instructional designers

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