Chapter 10
Educational Technology and Instructional Design in Synchronous Blended Learning Environments

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ABSTRACT
Advancements in educational and communicative technology have provided a new medium with unique properties that bring about new forms of transcultural learning and instruction. Rather than simulating traditional face-to-face classroom methods in online learning environments, the chapter examines different approaches for instructors in creating new ways to link technology to curriculum. This chapter begins by introducing the readers to many of the challenges, concepts, and practices associated with synchronous online learning environments. Through multiple case studies, the chapter will explore the importance of (a) content, pedagogy, and culture, (b) the role of the instructor and student in creating successful online learning environments, and (c) strengths and weaknesses of communication tools and educational technology in creating a blended online learning environment. The chapter helps instructors and students identify the benefits and shortcomings of technology, explore how to enhance dynamic interactions between individuals and groups, and examine how to capitalize on the strengths of audio and visual images to accompany other formats of instructional materials.

INTRODUCTION
This chapter focuses on instructional design and educational technology in relation to synchronous transcultural blended learning environments. Internet technology and computer-mediated communication (CMC) have made opportunities to learn available both online and offline. Not only has this increased accessibility for those who want to learn, but it has also shifted the dynamics of instruction. As students no longer have to commit to a single physical classroom, a seat in
front of a computer, or a technology medium, instructors must adapt to the student’s technology preference, learning style, and lifestyle. Accessibility has also broadened CMC usage to address a global population, adding yet another layer of complexity for instructors in teaching in transcultural blended learning environments. While technology has great potential to enhance students’ active learning, the use of technology requires a compatible pedagogy to achieve its benefits. In other words, course quality can easily vary depending on the capability of the instructor and the choice of technology.

Technology, when used well, can assist instruction, promote student interest, and improve student performance. Blended learning environments involve bringing together effective learning resources and appropriate choices of technology. This requires careful consideration. However, many colleges and universities often seem more concerned with reducing costs, offering courses online, and equipping the learning environment with popular software (e.g., Black Board, Adobe Connect, open courseware) than inquiring about the skills and concepts needed in integrating technology. Therefore, instructors are forced to assume this responsibility; they find it necessary to develop technological fluency, deal with the crude nature of learning devices, use tools rarely tested in the academic setting, and make use of applications that have little or no direct connection to their existing curriculum.

The goal of this chapter is to help instructors and students identify the benefits and shortcomings of technology, explore how to enhance dynamic interactions between individuals and groups, and examine how to capitalize on the strengths of audio and visual images to complement other instructional materials. The chapter will first introduce readers to many of the challenges, concepts, and practices associated with synchronous online learning environments. Through multiple case studies, the chapter will explore the importance of (a) content, pedagogy, and culture, (b) the role of the instructor and student in creating successful online learning environments, and (c) strengths and weaknesses of communication tools and educational technology in creating a blended learning environment. The chapter will conclude with reflections on future trends in online learning environments and discussion of how the use of highly customizable environments influences online learning environments in both formal and informal settings.

BACKGROUND

This section begins with an overview of literature in three areas that seem most relevant:

1. Blended learning and online environments
2. Collaborative learning and self-reflection
3. Social components of technology

Blended Learning and Online Environments

In blended learning, students and instructors explore new ways to apply different communicative technologies in their home learning environment and traditional classrooms. Communicative technologies consist of asynchronous tools (e.g., e-mail, bulletin boards) and synchronous tools (e.g., chat, real-time video conferencing, multi-user domains) that work with audio-video conferencing applications (e.g., Adobe Connect, Skype) and graphical virtual worlds (e.g., Second Life). High-quality, real-time video and audio streaming has promoted joint education and collaborative research in the fields of educational technology, culture, arts, and digital media technology. For example, Martyn (2003) described a successful blended learning model as consisting of an initial face-to-face meeting, weekly online assessments, synchronous chat, asynchronous discussions, e-mail, and a final face-to-face meeting for the final examination.