Chapter 6
Content Considerations for Blended Learning Experiences

Susan Prion
University of San Francisco, USA

Mathew Mitchell
University of San Francisco, USA

ABSTRACT

There are many resources available to higher education faculty to support selection and production of multimedia for use in blended (also known as mixed-mode or hybrid) learning experiences. Unfortunately, there is limited advice, best practice, or research available to assist a faculty member in determining which content would be best delivered to students in person, online, or in a mixture of the two approaches. This chapter describes a course design model used to determine the types of content that are best delivered in a completely classroom, only online, or mostly mixed pedagogical approach. The characteristics and criteria for content most suited to each of these instructional strategies are listed, and two worked examples from an undergraduate science and a doctoral statistics course are included.

INTRODUCTION

There are many resources available to higher education faculty to support the selection and production of multimedia for use in blended (also known as mixed-mode or hybrid) learning experiences. Unfortunately, there is limited advice, best practice, or research available to assist a faculty member in determining which content would be best delivered to students in person, online, or in a blend of the two approaches. The purpose of this chapter is to provide a detailed explanation of a simple course design model used to determine the types of content that are best delivered in a completely classroom, only online, or mostly mixed pedagogical approach. This model assumes that most blended courses are a true blend of classroom meetings, online classes, and hybrid classes. The characteristics and criteria for content most suited to each of these instructional strategies are listed, and two worked examples from an undergraduate science and a doctoral statistics course are included. The emphasis of this chapter is on the instructional design principles and practices that support effective blended learning experiences, rather than the evaluation of learner outcomes produced by these experiences.

DOI: 10.4018/978-1-5225-5557-5.ch006

BACKGROUND

Overview of Blended Learning Experiences

The term "blended learning" entered the professional education literature about 2000, in parallel with the rise in personal computer ownership by students and the increase in computer-based instructional strategies. Blended courses have documented advantages such as increased convenience for students, increased interaction between and among students and instructors, more effective accomplishment of certain types of student learning outcomes, increased learning, and better retention than in totally online courses (Moskal, Dzubian, & Hartman, 2013; Eagleton, 2017; Lopez-Perez, Perez-Lopez, Rodriquez-Ariza, 2011). Blended courses also offer students and faculty increased access to content; flexibility for scheduling and completion of course-related tasks; accommodation of different learning styles and preferences; and opportunities for just-in-time reflection, questioning, and discussion of topics (Rovai, 2004).

Students at American colleges and universities are working more hours to pay for their education and are increasingly vocal about their need for flexible, predictable and easy access to instruction 24 hours a day, 7 days a week. At the same time, multiple studies have demonstrated the high attrition rate of all-online courses and the need for social interaction and instructor contact that online students miss (Guzer & Caner, 2014; Ginns & Ellis, 2007). Given these seemingly contradictory demands, higher education faculty have invested time and energy exploring student and faculty perceptions of blended learning and the outcomes associated with these technology-dependent learning experiences. The need and interest for developing hybrid courses is high, yet the educational literature has emphasized the benefits of the strategy without a lot of practical advice about how to actually facilitate this restructuring (Vaughan, 2007).

We know that multimedia instructional materials can be efficient and powerful resources for student learning (Mayer, Moreno, Boire & Vagge, 1999; Mayer, 2005). Researchers have explored the differences between audio and visual presentations of information and the corresponding changes in cognitive load with each modality (Mayer, 2005). This research supported Paivio's Dual-Coding Theory (Paivio, 1986) and typically found that audio explanations of visual information were more effective than text-based explanations because of the engagement of the two parallel but related information-processing systems (Mayer, 2005; Tversky, Morrison, & Betrancourt, 2002; Moreno & Mayer, 1999; Moreno & Mayer, 2000; Moreno & Mayer, 2003a). Mayer's Multimedia Learning Theory (Clark & Mayer, 2007; Mayer & Moreno, 2003b) also predicts that audio explanations will be more effective than text because text-based explanations compete for limited cognitive processing space with the visual information because both used the same encoding system.

Much of the early online instruction neglected the implications of Paivio's work. The addition of text to visuals uploaded to the Internet did not increase student interest, motivation to learn, or adapt to flexibility in learning styles. Reading text and visuals on a computer screen, even with high resolution, is a tiring and annoying learning experience. The ability to add graphics, motion, music, split screens and other attention-grabbing devices may have increased web-based retail sales but did not increase student learning. Often, it produced cognitive overload (Sweller, 1988; Chandler & Sweller, 1991; Carlson, Chandler & Sweller, 2003), a situation in which demands on working memory exceed actual memory capacity.

In his book *Multimedia Learning,* Mayer (2001, 2012) described his Cognitive Theory of Multimedia Learning. This theory is based in several important assumptions. First, it recognizes the work of