

Chapter 2

Using Digital Technologies to Aid E-Learning: A Pilot Study

Michele T. Cole

Robert Morris University, USA

Daniel J. Shelley

Robert Morris University, USA

Louis B. Swartz

Robert Morris University, USA

Blessing F. Adeoye

University of Lagos, Nigeria

ABSTRACT

This chapter presents the results of a pilot study conducted in the summer of 2013 in which researchers sought to discover how students and instructors at two universities were using selected digital technologies in their coursework. To the extent that digital technologies were being used, did students find their use to be helpful in learning course material? Researchers surveyed undergraduate students at the University of Lagos, Nigeria, and undergraduate, masters, and doctoral students at Robert Morris University in Western Pennsylvania. For the most part, comparing responses from both universities demonstrated similarities in how and what digital technologies were used in coursework. However, there were significant differences found when the uses of certain technologies were examined at each institution and how helpful to learning they were for students. There was also a significant difference found in determining how soon new digital technologies would be adopted.

INTRODUCTION

In their ten-year study of the nature and extent of online education in the United States, Allen and Seaman (2013) found that online education continues to expand at a rate faster than traditional campus-based programs. The authors reported the number of students enrolled in at least one online course to be at an all-time high of 32% of all enrollments in participating institutions. This represents an increase of 570,000 students from the previous year.

Increasingly, institutions are examining their online delivery models, particularly with regard to how online courses are designed to maximize student learning. The arrival of Massive Open Online Courses (MOOCs) has intensified the pressure on traditional institutions of higher education to find better ways to reach a changing student body. In their 2010 report, Allen and Seaman noted that 63% of the universities and colleges in their study reported that providing effective online instruction was a critical element of their institution's strategic plans. As more institutions of higher education, both public and private, are partnering with commercial educational technology companies, such as Coursera, to offer courses online world-wide, including offering some for credit, there is a rising concern about the ability of the institution to control both the quality and the effectiveness of these courses.

What role do digital technologies play in instructional development for e-learning? Discussing the benefits and risks to student learning provided by the use of simulations, digital libraries, and computer-based tutorial programs, Dubose (2011) suggests that while integrating social media into the virtual classroom is attractive on several levels including student satisfaction and success with e-learning, as well as institutional benefits such as lower overall instructional cost, firm conclusions as to the role digital technologies, particularly social media, can play in instructional design are premature.

Five courses at two universities were chosen for the pilot study. These consisted of two undergraduate courses, two master's level courses and one doctoral level course. This study focused on which digital technologies students and instructors were using in their courses in order to better understand how these technologies could be incorporated in coursework to enhance e-learning. Results from the pilot study provide some data on the role digital technologies could continue to have in designing online courses. The study also examined how these digital technologies were currently in use and which technologies students found to have contributed positively to their learning in an online environment.

BACKGROUND

For online course design to be effective, instructors need to incorporate the "reality of the digital world" because the newest generation of learners is "hardwired" to use multiple types of Web-based media (Baird & Fisher, 2005-2006, p.10). For example, Huang and Nakazawa (2010) found that different Web 2.0 technologies, such as wikis, positively impact student learning by opening access to the instructor and to the other students in the course. In another example, this one focusing on students' use of social media in a business communications course, Kelm (2011) found the students' use of specific social media proved to be crucial in understanding the material.

Focusing on how Facebook was being used for instruction, Bosch (2009) looked at how students and instructors might use other digital technologies to enhance instruction and maximize learning. Others have looked at the use of digital technologies in course design. Greenhow, Robelia and Hughes (2009) reported on the potential of using interactive technologies in teaching and learning.

Otte, Gold, Gorges, Smith and Stein (2012) described the impact of academic social networks

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