

Chapter 11

Using a Blended e-Learning Cooperative Approach in Higher Education: A Case from Egypt

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ABSTRACT

This chapter describes a study conducted in higher education in the Egyptian context. A blended e-learning cooperative approach (BeLCA) was utilised with pre-service teachers (PSTs) in a science teaching methodology course. The chapter introduces a literature review on blended e-learning, cooperativeness, in addition to an approach that combines the two aspects together. The proposed approach (BeLCA) is based on social interaction between participants within the blended e-learning environment, where social constructivism theories play a crucial role. The chapter illustrates the effectiveness of utilising this new approach on participants' achievement, attitudes towards e-learning, and cooperativeness by adopting a quasi-experimental setting. The chapter also highlights on the instructional design utilised in the course development. The course design was based on Dick, Carey, and Carey's (2001) model: Analysis, Design, Development, Implementation, Execution (ADDIE).

INTRODUCTION

Including technology in teaching and learning has generated new experiences and roles. It is sought that the use of technology can facilitate authentic learning. But for this to happen, teachers need to be educated on how to introduce their content

area within a technological frame. Therefore, getting teachers, while in their teacher education programmes, to have direct experiences with technological tools should seem a forthcoming necessity. In the context of this study, introducing an electronic course was mainly to get pre-service teachers have hands-on experience with technological tools as a future work demand.

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Recently, many higher education institutions worldwide have embraced various technological advances. From the evident examples of this embracement is the inclusion of Learning Management Systems (LMS), Local Area Networks (LAN), Learning Management Content Systems (LMCS), and Virtual Learning Environments (VLE). More overtly, higher education institutions, that are aware of the main critical success factors of meeting international quality education standards in terms of utilising technology in teaching and learning, are opting for the most suitable approaches and tools that can serve such purpose.

‘E-learning’ and more recently even ‘m-learning’ were applied by some institutions as a means for meeting quality. From the few examples of the former are the use of CDs, electronic books, and simulations; while examples from the latter include podcasting, mobile phones, PDAs and data logging. As these educational technologies continue to emerge and progress, higher education institutions continue their search for quality.

One of the anticipated findings of this search is what is known as ‘blended learning’. This type of learning is particularly emphasised as recent surveys reported on the expected dramatic rise of using blended learning by higher education institutions (Bonk, Kim, & Zeng, 2006). Reasons for this rise are owing to its significant effect in enhancing the quality of student’s learning experience. Previous literature documented various examples where blended learning affected, for example, students’ critical thinking, social competencies, morale and overall satisfaction, communication and leadership skills. To appreciate blended learning, it seems appropriate to provide the readers with its definition.

In its simplest form, blended learning can be defined as the purposeful combination of different delivery methods selected from both Face to Face (F2F) and instructional technology methods. Bonk and Shi (2005) state that some instructors blend in order to benefit from the various advantages of F2F and virtual learning while others blend between synchronous and asynchronous tech-

nologies to accommodate for student’s needs and learning styles. The most common blends currently found in developed countries are between online synchronous technologies and F2F sessions. Less developed countries are striving to reach such level of blend; except that they are limited to providing students with only asynchronous technologies blended with F2F.

Depending on the purpose of the blend, an interesting classification of blended learning emerged, depending on the timing of introducing each delivery method. Students can be given access to technological methods before, during, or after traditional F2F sessions (Garrison & Kanuka, 2004).

Nonetheless, the scope of this chapter is limited to the use of blended e-learning, where technology use was mainly through an offline asynchronous learning environment. This is due to infrastructural issues that seem to hinder using online synchronous facilities in some developing countries. The guiding framework for the blended approach, presented in this chapter, is based on the social interaction between learners. Hence the intent was not to replace F2F learning with computers, but to take advantage of the benefits of both. It is sought that the suggested cooperative blended approach would have the potential to utilise the best attributes of F2F and electronic course delivery mode to enhance PSTs’ learning experience. It also sought to investigate the effect of the approach on various independent variables related to student’s learning. The study took a perspective where the blended course may encourage students to learn in new and unfamiliar ways with the use of a variety of tools and techniques.

Given this introduction, the purpose of this chapter is to illustrate the effectiveness of a blended e-learning cooperative approach presented to PSTs in a science teaching methodology course. Certain outcomes that indicate the effectiveness of the suggested approach were measured. These were particularly attitudes towards e-learning, cooperativeness and students’ achievement scores in the methodology course.

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