Chapter 7
Blended Mobile Learning in Developing Nations and Environments with Variable Access: Three Cases

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ABSTRACT

This chapter presents an overview of the experience of implementing mobile technology solutions in developing nations in conditions of limited Internet access, challenging logistics, and informal learning settings. Specific cases include experiences in blended mobile learning in Paraguay, Iraq, Afghanistan, Colombia, Nigeria, and in remote forward operating bases with NATO and U.S. military professionals. The chapter discusses the factors in developing effective instructional strategies for diverse learning settings and non-traditional learners. Further, it details the unique advantages of mobile learning versus e-learning, why the attributes of pervasiveness, ubiquity, and spontaneity can contribute to learner success, particularly when coupled with informal social networking and support groups.

INTRODUCTION

Mobile learning offers advantages to learners, primarily centered on the fact that m-learning can be spontaneous, ubiquitous, portable, personal, contextual, and personal. However, limited access, hardware and software issues, and size and space limitations, can impede effectiveness. Further, individual learning style differences and the nature of the subject matter may require a flexible approach. While m-learning can refer to any portable device, including digital media players, and handheld computers (personal data assistants / PDAs) some authors and researchers, such as ULTRALAB (mlearning.org, 2009) focus on mobile phones that have the capability of transmitting and receiving text, audio, and video.

E-learning using laptops or desktop computers connected to the Internet offers robust, web-based solutions that can be multimedia rich, and effective synchronous and asynchronous collaboration.

DOI: 10.4018/978-1-61692-818-6.ch007

However, desktop based e-learning is not portable, nor is it ubiquitous. It is difficult to create the kinds of interactive situations that are possible with mobile learning, such as those where learners are gathering data from their environment and are sharing them with other learners. It is also difficult to foster an atmosphere of spontaneous learning, where the student is able to, for example, listen to a lecture or a debate while commuting to work.

Blending old and new technologies is often the most effective approach to incorporating mobile technologies in teaching, training, and learning programs. Ideally, a blending of mobile and desktop-based e-learning can result in a program that accommodates learners' differences, whether they consist of learning styles and preferences, or whether the differences have more to do with delivery of the materials, including access, software, hardware, instructional materials, and assessment. The key is to align instructional strategies with learning goals, while accommodating the learners' individual situations and the learning environment.

Creating the ideal blend of e-learning and m-learning requires careful planning, which begins with an examination of learning objectives, and then continues with a realistic evaluation of the conditions of learning (access, software, hardware), the logistics of the learners, and their likely learning preferences. After the factors are considered, then instructional strategies can be developed and implemented.

Even when all factors are brought to bear, successful implementation often depends on motivation – not just on the part of the learner, but also with the instructor and the instructional support team. The instructor and the online support team must respond in a positive, solution-centered way to unexpected issues that may emerge, and to help reduce frustration and learner anxiety, and must keep students focused and on task. Many of the success strategies must be developed based on in-the-field experience.

The goal of this chapter is to present, analyze, and discuss cases of mobile learning in developing countries, with an end to making recommendations with respect to appropriate and effective learning strategies, ideal blends of technologies (mobile, web-based, traditional books and paper, F2F, high-tech materials, digital pens, all-weather paper), the development of learning communities, the adoption of creative uses of podcasts and GIS to engage learners, reinforce experiential learning, the development of methods to address the affective domain: motivation, attitude, self-efficacy, self-determination to boost learner engagement and course completion, and the effective uses of mobile technologies for meaningful assessment and evaluation.

Specifically, the following cases are examined:

Mobile devices; almost no connectivity. The primary challenge consisted in limited connectivity. Handheld devices and portable media devices were used to provide e-book content, lesson plans, audio lectures by the subject matter experts, review materials. Some cases included informal collaborations as individuals formed study groups or friendships. This approach was used in Paraguay with the University of Oklahoma's College of Continuing Education and the Paraguayan American Cultural Center.

Mobile devices in remote locations with limited connectivity. The primary challenge consisted in limited connectivity, along with expensive books and materials. iPods were used to provide instructional podcasts (videos and audio), interactive grammar activities, instructions for activities, guides for collaborative / peer activities. This approach was used for military students deployed to Iraq, Afghanistan, and other locations.

Mobile devices used for content and interaction. Skype and web-conferencing software was used for synchronous elements. Email and blogs were used for asynchronous interaction. One major challenge was to meet the needs for portability while keeping the ability to communicate synchronously. Mobile devices used to download and store instructional content (ebook, video podcasts, lesson plans, audio lectures), and also to provide