

# Mobile Learning Comes of Age



How and Why Organizations  
are Moving to Learning on Mobile Devices

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# Part 1: The Significance of Mobile Learning

## Introduction

Mobile learning (a.k.a. “m-learning”) refers to the use of mobile and handheld information technology devices, such as personal digital assistants (PDA), cellular telephones, MP3 players, laptops, tablet PCs, and wearable computers, in teaching and learning activities. Essentially, it is learning and knowledge sharing that takes place when a person is using a mobile device.

However, it is important to note that, in the newest generation of mobile learning, the actual device may or may not be the focal point of the learning experience. Learning applications that use mobile devices have expanded to the point that the device may be there only as a tool, with the educational experience taking place in a much larger context. With the emergence of Web 2.0 technologies, online learning, including mobile learning, has become much more participative, learner centered, and networked.

Clark Quinn (2000) sees m-learning as “... the intersection of mobile computing and eLearning: accessible resources wherever you are, strong search capabilities, rich interaction, powerful support for effective learning, and performance-based assessment ... e-learning independent of location, time and space.” The Mobilelearn Project (2003) advocates for “a new m-learning architecture [that] will support creation, brokerage, delivery and tracking of learning and information content, using ambient intelligence, location-dependence, personalization, multimedia, instant messaging (text, video) and distributed databases.”

As Nie (2006) has noted, “most theories of pedagogy fail to capture the distinctiveness of mobile learning.” This may be because they are based on the assumptions that learning takes place in a classroom and is led by a trained teacher. This in turn has led to the first uses of mobile learning to be the presentation of information, lectures, and multiple choice assessments.

But, if we look at learning as the result of interactive and social experiences, then such socio-cultural theories as “activity theory” become relevant to understanding mobile learning. Developed in the 1930s in the former Soviet Union by Vygotsky (1978) and Leont’ev (1978), activity theory focuses on understanding human activity and work practices in terms of intentionality, mediation, history, collaboration and development. In short, it establishes that learning has a flow or process, and that it takes place in a particular context. It is more like a conversation (Sharples, 2005), which seems like a particularly relevant metaphor, given that cellphones are one of the primary categories of devices used in m-learning.



Because of the many possible devices and methodologies involved, mobile learning can be messy. Sprake (2007) refers to it as “disorganized learning,” because it is not anchored in a particular time and space.

Four years ago, there were estimated to be 1.5 billion mobile phones in the world (Prensky, 2004). This was more than three times the number of personal computers (PC), and these sophisticated phones have the processing power of a mid-1990s PC. In addition to sales of 1 billion new mobile phones in 2009, it is predicted that there will be 2.6 billion units in operation by that year. The emergence of new ways of using these convenient devices is well underway.

Mobile learning also has been defined as “the acquisition of any knowledge and skill through using mobile technology, *anywhere, anytime*, which results in an alteration in behavior.” As noted in the introduction above, ideally, mobile learning is personalized based on the characteristics and context of the learner, and uses mobile devices to connect to the “cloud of information” available through electronic networks. Mobile learning also has been referred to as a “nomadic learning style.” A variety of other terms to describe learning using mobile devices are found in the literature, including “ambient learning,” “conversational learning,” “microlearning,” “ubiquitous computing,” and “pervasive computing.” Mobile learning also is closely related to “wearable computing,” where a mobile device is embedded in a learner’s clothing.

Mobile devices used for learning are sometimes called “information appliances” - appliances specializing in information: knowledge, facts, graphics, images, video, or sound. An information appliance is designed to perform a specific activity, such as providing music, photography, or writing. A distinguishing feature of information appliances is the ability to share information with each other (Norman, 1998).

A cloud metaphor also is used to describe the fact that information and learning is distributed among many different devices and computing environments. We connect to the “cloud” through many channels, and for learning to be truly mobile, a user must be able to seamlessly move around the environment while the various devices he or she uses switches to different modes and sources based on constantly changing dynamic information, such as location and time of day. This means keeping most of one’s software and data on the Web so it is easily accessible from any location with Internet access. This state has been labeled “connected cocooning” in a report from MTV. As we move around, the Internet will follow us.