

# UNDERSTANDING MOBILE LEARNING



PART 1



# CHAPTER 1



## Enterprise Mobile Learning A Primer

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Although people have been learning while mobile for millennia, what we mean by “mobile learning” is the ability to move from place to place while using mobile devices to receive from and contribute to a variety of digital information sources. While a large variety of lightweight devices can be used in mobile learning, the important part of this definition is that *the learner is mobile* and not confined to a specific location.

As a society, we’ve become much more mobile, both as individuals and as groups, than people who lived only a few decades ago. We are nomads, often on the move, but remaining connected to our friends, families, workplaces, and information sources. For many people, such as sales staff, field services workers, consultants, transportation personnel, and high-level executives, being mobile is a major component of their work environments. For many other people as well, commuting to work is part of life and takes up a significant part of the day.

But, as we move about, most of us are equipped, often from our early teens now, with one or more mobile devices connected to a range of information and communication services. The ability to move about while remaining connected is the essence of mobile learning. This change has an impact on both the place

and the timing for learning. It empowers learning outside of fixed places specifically designed for learning, such as classrooms and labs, and makes information for learning available any time it is needed. Full-scale adoption of mobile learning will have a profound impact on the structure of enterprise learning and development departments in ways that we are just beginning to understand.

## Business Drivers of Mobile Learning

These are early days in the adoption of mobile learning within large enterprises. Some of the business drivers that are moving mobile learning forward in such organizations include:

- *The need for speedier training is evident.* Because we live in a time of rapid technological change, there is often a need for more frequent training as new procedures, strategies, and technologies are adopted by companies.
- *Time available for training has been reduced.* At the same time, hyper-competition and the demand for multitasking by workers has meant that there is less time available for training. Training often has to be done “on-the-fly” or outside work environments. Mobile learning offers one solution to this problem.
- *Mobile learning reinforces a major goal of enterprise learning and development departments.* Enterprise learning is a bit of a misnomer. In reality, most enterprise training is actually meant to increase performance and has very little to do with what is traditionally thought of as acquiring new knowledge. Gaining knowledge and long-term retention of information is often a side-effect of corporate training; but make no mistake, if companies could forego training employees and still maintain or increase performance, they would. Mobile allows resources in the learning and development departments to be spent on efforts to increase performance by having information available when needed, rather retaining knowledge for a long time.
- *The infrastructure for mobile learning is already in place.* The widespread deployment of mobile computing means that the infrastructure for mobile learning is usually in place, and

most workers already carry a mobile device with them most of the time. While some companies want to issue standard, “company liable” smart phones or tablets to their employees, many organizations are taking advantage of the existing situation by using a “bring your own device” (BYOD) strategy.

- *Many workers are already mobile.* For many jobs, the workforce is already “on the road,” meaning that it is often expensive to bring them into a central location for training. Still other workers don’t go into the workplace every day, but work from home or from other locations. Some are commuters who may be able to work while using public transportation to reach their physical workplaces. Finally, within a large building or campus, employees may move around a specific area as part of their jobs. All this means that, for many workers, mobile learning already fits with their lifestyle and work habits.
- *With globalization, mobile devices may be the best way to reach all employees.* Global sourcing and global labor mean that employees or customers who need training may be anywhere in the world. For some, a mobile smart phone or tablet may be the only computing device available.

In addition to presenting training materials, mobile learning can be used for performance support, research, and learning management. Mobile learning, when properly designed, can be described as “just in time, just enough, and just for me.” The capabilities of mobile learning extend well beyond the methodologies of traditional training and allow greater efficiency and effectiveness of the training and development function within an organization.

## The Mobile Learning Ecosystem

Many components go into a successful mobile learning experience. Together, they can be seen as a “mobile learning ecosystem.” Components include a large variety of mobile devices with many features and capabilities, several types of content, a handful of different operating systems or platforms, a network of mobile communications providers with different standards, offerings, and price structures, a developing suite of tools for content creation, and

a set of new concepts and uses for mobile learning that we are just beginning to understand.

Mobile devices come in many shapes and sizes and have many ways of connecting to and distributing information. Input devices include microphones, cameras, keypads, small keyboards, clickable scroll wheels, mini joysticks, touch pads, touch screens, voice, Wi-Fi, Bluetooth, RFID, Near Field Communications, infrared, accelerometers, sensors, magnetic field detectors, and styluses. Output methods include text, sound, video, images, digital signals, LED lights, and various forms of 2D and 3D projection onto surfaces or directly into the eyeball. Work is underway on devices that stimulate the senses of smell and taste using a mobile device.

### Mobile Learning Applications

Learning designers and developers have many choices for how to facilitate learning using mobile technologies. The specific techniques that you choose to implement in your mobile learning design will depend on your learning theories, your experience at training or teaching, and the characteristics and needs of the learners you are trying to train. Mobile learning applications can be broken into five broad categories.

#### Content Transmission and Retrieval

Learning materials relevant to an employee can either be created by the training and development department and “pushed” to the learner, or can be retrieved by a user at “the point of need.” Because of the nature of mobile learning, it is best if learning materials are in the form of small “nuggets” of information, rather than large-scale productions or courses. For most workers, mobile learning is something that is usually done in small amounts, but several times during the day. Notifications can be used to alert employees to a required or important piece of information they need to consult.

#### Capturing Data

In contrast to e-learning, mobile phones and tablets are bidirectional, allowing users to employ them as data-gathering and storage devices as they move about. An inquiry-based pedagogy makes sense

for mobile learning and turns a mobile device into a research tool (see Chapter 24). First-person documentation activities can include maintenance of a learning portfolio, monitoring and trend tracking of local phenomena, and the creation of user-generated content.

## Communicating and Interacting with Others

Because mobile devices can be networked, they are great for communicating, coordinating actions, and collaborating with others. Networking allows for texting, social media, voice communications, group games, simulations, experiences in virtual worlds, and real-time mentoring, as well.

## Computing Algorithms

Mobile devices such as smart phones and tablets can also be thought of as computers in their own right. Many of these are more powerful than many desktop computers just five or ten years ago and, because of that, they can be programmed to do almost anything. This has spawned a mobile app industry that has exploded, with over two million separate pieces of software available in various app stores on the Internet. Thousands of apps now available can be used for mobile learning.

## Contextual Inquiry

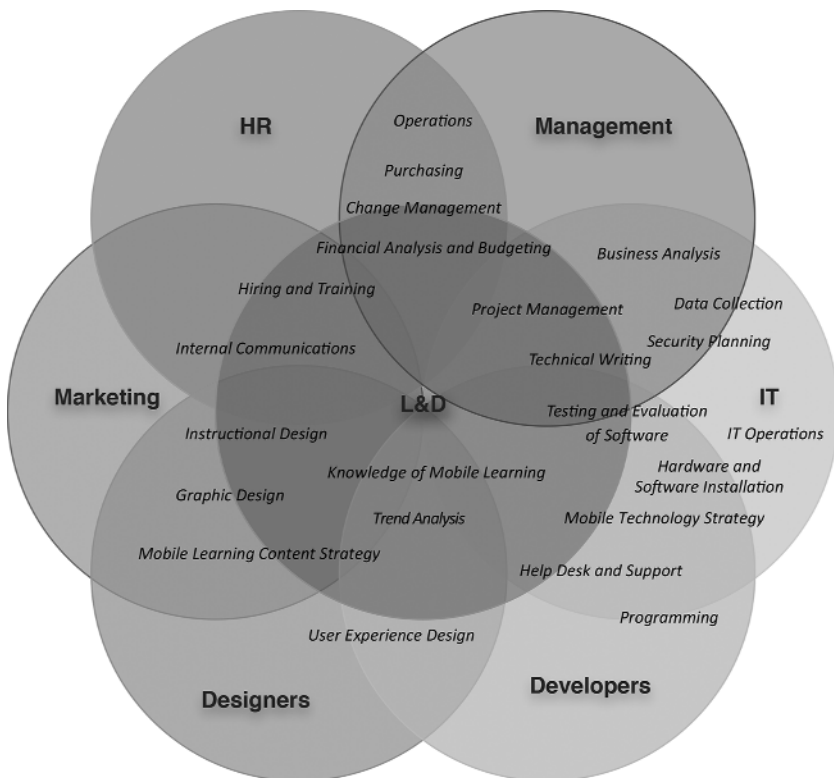
Not only can mobile devices retrieve information from databases, but they can also be used to interact with “smart” objects and/or other mobile technology—connecting people in a person’s immediate environment. Additionally, the ability of many devices to detect a user’s location and orientation allows for new kinds of informational experiences, such as augmented reality and geofencing.

In addition to these five categories of mobile learning experiences, mobile applications can also be used to manage learning activities in the classroom or in the field. Live information on emergencies and instructions on what to do in those situations can be conveyed to a group of dispersed users very quickly. And mobile extensions of more traditional learning management systems allow the tracking of mobile learning by existing learning and development software.

## Designing and Creating Mobile Learning Content

At the present time, no rapid authoring tools will easily allow a non-technical person to produce all of the above types of applications. At this early stage of the development of the field of mobile computing, it is usually necessary to use a combination of a designer and a software developer to produce a desired application or to use applications that have been built by others. Once you move beyond creating simple read-only content, you are entering a realm more akin to traditional software design and development than to e-learning or other instructional design and development paths.

There is a recommended process (see below) by which mobile learning content can be built. We start with understanding the



**Sample Process**



business needs behind the desire to have mobile applications and content produced. Mobile learning creation involves several different design and development skill sets—producing a strategic business analysis of the need for mobile learning, understanding mobile content strategy, managing a sound mobile learning design and development process, leading a solid technology and programming team, and project managing both the development and implementation of an outstanding mobile learning system. Unless you have such a team with these skills sets in-house, you will most likely need to outsource the development of mobile learning to a competent vendor with these skills.

