

Mobile Learning and Classrooms of the Future

What is Mobile Learning?



Mobile Learning (commonly referred to as 'm-learning' or 'handheld learning') is a form of electronic learning which is delivered to the user on portable devices. It was originally devised to attract young adults back into learning but has since progressed to encompass classrooms, workplaces, museums, galleries, hard-to-reach rural locations, etc. with a focus on user-mobility and distance learning.

One immediate benefit to this type of learning is engagement; those who typically struggle with traditional learning are often engaged more readily through m-learning. The use of modern technology and gadgets can gain the

user's attention more quickly through clear and simple interfaces enhanced with multimedia content.

As well as making learning more enjoyable and engaging, mobile learning can also enhance and support traditional learning. For example, students can download mp3s of past lectures or museum visits to enhance and reinforce their learning. Due to the immediacy and portability, m-learning is well suited to shorter applications and collaborative working including:

- work which is carried out on location
- classroom use as an alternative to books/computers
- collaborative projects and fieldwork
- providing skill checks to fill in knowledge gaps
- promotions and campaigns
- 'just-in-time' training
- situations where learners are widely spread out or in hard-to-reach locations.

Whilst m-learning shares many similarities with traditional e-learning (particularly in the structure of learning modules and assessments), there are several areas where it differs, particularly in the use of the actual devices which deliver the learning.

M-learning Devices

Devices which are capable of delivering m-learning are often already in everyday use and therefore may be familiar to the user prior to learning, including:

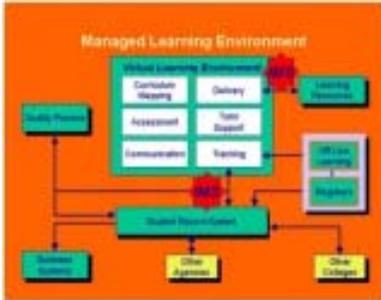
- mobile phones
- PDAs
- tablet PCs
- mp3/media players
- handheld & traditional games consoles (e.g. Wii, PSP, DS)
- whiteboards.



Laptops are generally not considered viable delivery devices within m-learning communities due to a lack of true portability and the need for LAN connections which are not always possible in remote locations.

By far the most common device for m-learning delivery today is the mobile phone. Cheap, portable and readily accessible, there are an estimated two billion mobile phones in use throughout the world today, a number which is expected to reach three billion within five years.

One of the bonuses to developers is the availability of SCORM-compliant mobile authoring platforms that extend their e-learning applications, along with tracking and delivery systems to mobile phones. So a whole new area of learning is exploited while also saving companies money.



Learning Management Systems

A basic m-learning package will typically include a Learning Management System (LMS – also known as VLE, MLE, CMS, etc.) which, when put together with a micro-portal interface layer, enables the user access to the m-learning modules and services.

Some LMSs also have speech-to-text functionality (and vice versa) as well as SMS text facilities for mobile devices with limited multimedia capability and for users

with accessibility needs.



ePortfolios

ePortfolios are a form of e-learning record (usually accessed from within the LMS) which are used to provide evidence of a user's progress within learning courses.

They offer the user a chance to share and reflect on the evidence attained through their learning experience and can include text, images, video, audio, forums, blogs, hyperlinks, etc. ePortfolios can then be selectively shared with other parties such as peers, teachers, assessors and

employers.

Development and Testing Strategies for m-learning

For software developers, strategies for creating m-learning applications are likely to be based on existing practices, but will also incorporate some new considerations in light of the additional technology in use. Whilst core content and functionality testing will be similar to that of traditional e-learning, the levels of required compatibility testing are much more diverse than standard PC applications due to the wider range of mobile devices and learning environments used.

Some of the specific challenges you may need to consider when planning the development and testing of your m-learning products are likely to include:

- multiple standards, e.g. screen sizes, operating systems, input medium
- narrow bandwidth for mobile devices
- repurposing existing e-learning for mobile devices
- accessibility requirements
- end-user cost barriers
- assessing learning outside the classroom
- tracking of results
- privacy and data protection.

Strategies to bear in mind when developing your m-learning content are often very similar to those used when designing for accessibility, as the need for clear and easily accessible content is paramount. Some things to consider might include:

- keep it simple
- avoid large amounts of data and text

- avoid underlined text as this may be mistaken for links
- use selection lists for data entry
- consistency – place links in same place throughout application
- always provide a link to the Start page or Index
- use titles on cards to ease navigation
- use tabloid format – headlines and summaries
- use short words.

Ensure any audio/video/graphics resources are compatible with default delivery specifications (see links below) and always try to minimise demands on processor, memory and presentation. Be aware that the bandwidth available for wireless networks is considerably less than for local networks, so some loss of quality in resources is to be expected. As networks improve, this is likely to be less of an issue.

Mobile learning can extend the benefits of e-learning; as technology increases our mobility, and with portable devices being able to deliver learning content anywhere in the world, places which weren't previously considered as realistic learning environments could soon become our classrooms of the future.

Links

m-learning related websites:

<http://www.hotlavasoftware.com/>

Provider of mobile authoring, publishing, delivery and tracking solutions

<http://www.redhalo.com/>

Provider of online learning space

http://www.epic.co.uk/content/resources/white_papers/m-learning.htm

Epic white paper on m-learning

<http://e-standards.flexiblelearning.net.au/topics/mlearn.htm>

Some recommended specifications for m-learning deliverables including audio/video file formats

<http://www.mahara.org/>

Open source ePortfolio application

m-learning on Youtube:

http://uk.youtube.com/watch?v=c_Gu15sLOGk

How mobile learning is set to create revolutionary changes in education

http://uk.youtube.com/watch?v=GIUH_rRGixI

Mobile learning overview

<http://uk.youtube.com/watch?v=7mU1dUMpxXc>

Introduction to mobile learning in education

<http://uk.youtube.com/watch?v=4Sd64slzt0g>

Example of language learning via mobile learning

<http://uk.youtube.com/watch?v=VI5-FhdPeuQ>

Comparison showing mobile learning compatibility between older phones and newer technology

http://uk.youtube.com/watch?v=9kwoaw_5Ba8

Case studies of m-learning