

Mobile

Learning Made Easy

By Naomi Norman

Since increasingly more staff are using smartphones and tablets—their own or ones supplied by their employer—it's no surprise that there's a growing desire for training to be delivered via these mobile devices. The benefits are numerous; however, so are the challenges. This article sets out some of the key benefits, going beyond the much-stated convenience of anytime, anywhere access. It also offers solutions to some of the key challenges such as how to design effective mobile learning and how to design it once but deliver it to different devices across multiple platforms.

Mobile learning research

Many of the benefits and challenges described in this article are taken from research on the potential of mobile learning, which was recently commissioned by the United Kingdom's National Health Service (NHS). As the world's fourth biggest employer, the NHS has more than 1.3 million staff with a vast array of training needs. But classroom training is expensive (though, at times, essential), and e-learning relies on people sitting at workstations, which isn't great for those working in the community, such as district nurses and midwives, or those constantly on the move such as junior doctors. The NHS, like other organizations, is now waking up to the fact that many staff have training devices in their pockets, aprons, and handbags.

The research—conducted by Epic, the United Kingdom's leading e-learning company—was a major assignment, with review at critical stages by Chris Davies, head of the E-learning Research Group at Oxford University. It took place over four months from November 2010 to March 2011, and involved more than 170 NHS staff, from radiographers and administrators to community psychiatric nurses and ambulance staff.

“This could prove to be an important study,” says Davies. “There is no question in my mind that this is an issue which is finally of real relevance because of the massive increase in the usability and uptake of mobile devices such as


smartphones and new generation tablets in the last few years. The benefits, challenges, and subsequent recommendations that emerged from this study could apply to any organization thinking about implementing mobile learning.”

Key mobile learning benefits

Epic's research found mobile learning to be beneficial because it

- is more convenient
- is more relevant
- can take place during down time
- eliminates technological barriers
- empowers learners
- enhances content retention
- enables speedier remediation
- leads to improved learner confidence
- results in better professional judgments
- makes for easier evidence collection
- encourages reflection
- affords numerous social learning opportunities.

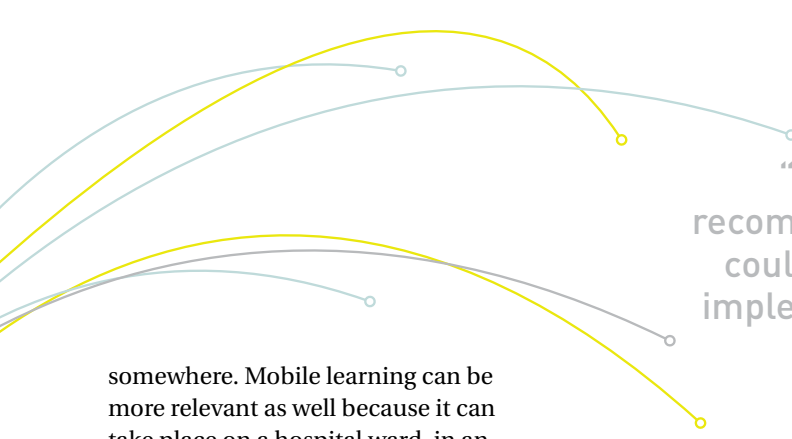
Inevitably, the obvious benefit of mobile learning is its convenience—gone are the days of booking an afternoon to take a course, or having to find a free computer terminal

A woman with dark hair pulled back, wearing a black blazer over a white top, is looking down at a tablet computer she is holding. Several colorful lines (yellow, white, and light blue) radiate from the tablet, extending upwards and outwards. The background is a dark, textured wall.

**Recent research
reveals the benefits
and challenges of
mobile learning.**



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“The benefits, challenges, and subsequent recommendations that emerged from this study could apply to any organization thinking about implementing mobile learning.” —Chris Davies

somewhere. Mobile learning can be more relevant as well because it can take place on a hospital ward, in an office, or at a client’s location—the very setting where the learning is to be put into practice. Of course, this flexibility also means that it can happen during down time such as while waiting to begin a meeting, standing in line for coffee, or traveling.

However, among the research findings were some less obvious benefits. For example, when using their own mobile devices learners are already familiar with the technology, thus eliminating the technological barriers that often can exist when deploying new kinds of learning technologies. And because the devices typically are always turned on, the research found that learners are empowered to take the initiative and direct their own learning activities in a way that they hadn’t necessarily done before.

On accessing mobile learning, the inclusion of pithy “nuggets” (based on the assumption that nobody will do a lengthy course on a small mobile screen) ensures only a few points are made at a time. This leads to enhanced retention, probably as a result of minimizing cognitive overload. Then, when something is forgotten and needs referencing quickly, the ease of access to the learning was found to enable speedier remediation. When this happened just prior to having to perform a task of relevance to the learning, it led to improved learner confidence too. Additionally, the quick double-checking of learning to help inform an imminent decision was found to result in better professional judgements.

There were benefits related to assessment as well. The portability and some of the functionality of mobile devices makes for easy evidence collection such as collecting portfolio evidence via audio, photograph, or video. These tools also encourage reflection, especially the voice recorder, which offers

effortless and instantaneous recording of thoughts and opinions.

Of course, there are the numerous social learning opportunities afforded by mobile learning: SMS texting reminders, knowledge sharing through microblogging, and simply the ability to dial a number and speak to a peer, mentor, or expert to seek the answer to questions.

All these benefits have one exciting thing in common for the NHS: In addition to more effective training, the agency believes that mobile learning also may deliver improved patient care. Extend that finding to a different kind of business, and you surely get more effective training and improved customer service.

Key mobile learning challenges (and their solutions)

To state that learning on mobile phones, and increasingly tablets, is the panacea to all training ills would be to ignore some of the challenges. Six main concerns were raised that underscored the challenges of mobile learning.

Researchers examined how to

- gain buy-in from those resistant to mobile learning
- effectively design programs for mobile devices
- incorporate flash-supported media into Apple products
- prevent cheating
- track learners’ progress
- keep costs down while designing programs compatible to different devices and multiple platforms.

An inevitable question about adopting mobile learning is: What about those who are resistant to learning this way? The research uncovered one small mobile learning project involving oncology nurses who, apart from a couple of enthusiastic adopters, had widespread concern about the additional potential burden brought on by the new

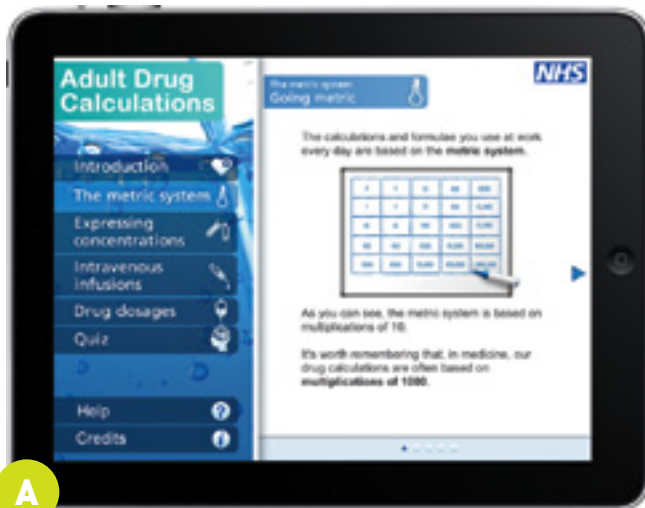
technology. However, after using the devices for a few weeks, far fewer nurses expressed the same concern.

“By then, they were clear on how the mobile learning added value...it’s this that leads to motivation and users ultimately embracing it,” commented the project leader. Therefore, it seems that overcoming the challenge of resistance requires overt communication of the value of the mobile learning, as well as time to allow learners to get used to the devices. It also helps to identify one or two champions.

“Of course, there will always be a few people who are resistant, or for whom mobile learning isn’t the best solution for them,” says Marcus Boyes, Epic’s head of mobile learning. “A simple way to overcome this is to do what we do at Epic, and ensure all mobile learning is also accessible through a PC. This enables maximum flexibility for the learner.”

Another challenge to overcome is determining how to effectively design for mobile devices, which is clearly different from designing for a PC. Epic’s award-winning instructional design team identified three key solutions.

First, content must be broken up into appropriate chunks. This may require identifying an appropriate metaphor. For example, the metaphor of revision cards is a good one when offering revision on an entire curriculum: the learner can swipe through multiple cards on his mobile screen, and tap to delve deeper into the content. Second, content must be viewable without extensive downward scrolling. So, for example, when giving feedback to a question, design the feedback to pop up rather than requiring the learner to scroll down to read it. Third, give careful consideration to user input. If learners need to touch the screen with their finger or stylus, or record audio reflections,



A



B

A. NHS makes an adult drug calculations program available on Android and Apple software.

B. NHS staff also can access a compatibility of injectable medicines curriculum on their Android and Apple devices.

there may be no problem. But if they need to enter text, it's important to be mindful of the limitations of using a keyboard on some mobile devices. Undertake user testing (specific to each common mobile device) to determine the tolerable limit.

As for incorporating rich media into mobile learning when Apple doesn't support Adobe Flash, "overcoming this one is less complex than many people believe," says Boyes. He recommends converting flash animations into video, which will allow them to be played on all mobile devices.

An additional concern about mobile learning is the possibility for learners to cheat on assessments. According to Boyes, this can be prevented. "Mobile devices with in-built cameras can take photographs at random intervals, which can be matched against staff records to ensure it is indeed the correct person taking the assessment," he says. "Of course, staff would have to be made aware that their identity was being validated in this way, and anyone that objected could be offered an alternative means for assessment."

Related to assessment is the challenge of tracking learners' progress. This was of particular concern to stakeholders interviewed for the NHS research because they have to maintain high levels of data security. Therefore, the first step is to ensure that the learning management system (LMS) is on a separate system from highly secure data such as confidential patient records. This means learning can be accessed via Internet without any risk of compromising

sensitive data. Next, design mobile learning with an offline capability, with tracking information stored on the mobile device that synchronizes with the LMS when a wireless or 3G connection becomes available. This not only enables tracking, but reduces the risk of data loss due to lack of connectivity.

Last, but by no means least, is the question: How can you keep costs down by designing learning once, but delivering to different devices on multiple platforms? NHS budget-holders considered this a fundamental problem because they were aware that while NHS largely issues Blackberries (which use the RIM operating system) and HTC smartphones (which use the Android operating system) to staff, many personal devices used by staff are iPhones and iPads (which use the iOS operating system). This, however, doesn't mean you must pay to design the same mobile learning program several times over for different devices.

"A good authoring tool built specifically for mobile learning, like GoMo Learning, enables the learning to be designed just once and then delivered cost effectively across multiple mobile platforms," explains Boyes. "GoMo Learning is used by our team of instructional designers, but it's such an easy-to-use tool that it can be licensed to organizations so that their in-house trainers can design mobile learning for themselves."

Now is the time to take heed

"Learners' attitudes and expectations of mobile learning will increasingly

be driven not by those inside their organization but by those of the wider social world," warns John Traxler, the United Kingdom's only professor of mobile learning. "For any organization, this issue will become increasingly important as the context changes from deploying a specialist-dedicated technology and pedagogy from within the organization to attempting to appropriate and exploit a commonplace social phenomenon. This opens up enormous possibilities but complex challenges."

That is why it's important for organizations to take heed now and begin to embrace mobile learning for some of their training—and it's the responsibility of learning technology specialists to make it easy for them to do so.

Outlining the benefits enables organizations to acknowledge the business case for mobile learning, and being honest about the challenges and seeking ways to overcome them enables organizations to make plans for putting mobile learning into practice. Sharing knowledge, tips, and tools in articles like this will hopefully make the route to success that much easier.

Obtain the full research report by emailing contactenquiries@epic.co.uk.

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