Role of M-Learning in the Teaching-Learning Process

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Abstract:
Mobile learning provides a way for educational institutions to deliver knowledge and educational content to students on any platform, anyplace and at the time of need. It is a form of distance education; m-learners use mobile device educational technology at their time convenience.
M-learning technologies include handheld computers, MP3 players, notebooks, mobile phones and tablets. M-learning focuses on the mobility of the learner, interacting with portable technologies. Using mobile tools for creating learning aids and materials becomes an important part of informal learning. This paper focuses on the mobile learning and its impact on the education.
Keywords : m-learning, education, technology

Introduction:
M-learning or mobile learning is 'learning across multiple contexts, through social and content interactions, using personal electronic devices'. A form of distance education, m-learners use mobile device educational technology at their convenient time. Technologically-assisted learning, on which this concept of mLearning depends, builds on a long tradition of distance education, stretching from correspondence study in the 1840s to educational television, mailed-out video and audio cassettes, audio and video teleconferencing, and most recently the use of interactive multimedia, including CD-ROMs and re-usable online learning resources. It also draws on flexible classroom-based delivery, librarianship and information science, and the independent pursuit of knowledge through conventional research and self-directed inquiry. In considering mLearning, this breadth frequently encourages discussion of definitions of learning, with a common tendency being to refer to "learning", when what is actually meant is "teaching" or "training". Any attempt to define "learning" in general, and its implications, are not directly addressed in this summary. There are a number of challenges in discussing the impact of Information and Communication Technologies (ICT) on teaching and learning broadly, and more in specifically considering mLearning. The first is the challenge posed by the huge and growing body of literature about mLearning and the associated rapid technological developments underpinning its spread and use. Today, the volume of information available is so great, and the speed of change so rapid, it is difficult to keep up with developments, even within this fairly specialised area.   Partly because of this rapid growth, the quality of information about mLearning is also variable. Anecdotal, speculative, developmental and conjectural claims are frequently presented in the same domain, and often in the same form, as more objective and empirical information.

Linking mLearning to education theory
Most reviews of technologies and mLearning have been concerned with technologies to address specific curriculum areas or delivery issues. In addition, there has been some theoretical interest in building mLearning into existing education theory. This relates mLearning to an activity- centred

perspective, essentially considering new practices against existing education theories. A review of the literature reveals six broad theory-based categories of activity, and identifies a number of examples of the use of mobile technology in each of them.

Behaviourist: activities that promote learning as a change in learners' observable actions In the behaviourist paradigm, learning is thought to be best facilitated through the reinforcement of an association between a particular stimulus and a response. Applying this to educational technology, computer-aided learning is the presentation of a problem (stimulus) followed by the contribution on the part of the learner of the solution (response). Feedback from the system then provides reinforcement. In a mLearning context, classroom response systems like "Classtalk" (Dufresne et al 1996) and "Qwizdom" (Qwizdom: Assessment for Learning in the Classroom 2003) fall in this category, as well as examples of content delivery by text messages to mobile phones (BBC Bitesize 2003, 2004).

Constructivist: activities in which learners actively construct new ideas or concepts based on both their previous and current knowledge In a constructivist approach, learners are encouraged to be active constructors of knowledge, mobile devices embedding them in a realistic context, at the same time as offering access to supporting tools. Compelling examples of the implementation of constructivist principles with mobile technologies come from a brand of learning experience termed 'participatory simulations', where the learners themselves act out key parts in an immersive recreation of a dynamic system. Examples include the Virus Game (Collella), Savannah (Facer et al), and the Environmental Detectives (Klopfer and Squire).

Situated Learning: activities that promote learning within an authentic context and culture Situated learning posits that learning can be enhanced by ensuring that it takes place in an authentic context. Mobile devices are especially well suited to context-aware applications simply because they are easily available in different contexts, and so can draw on those contexts to enhance the learning activity. The museum and gallery sector has been at the forefront of context-aware mobile computing to extend the gallery experience into personalised learning. Examples of mobile systems that situate learning in authentic contexts include the Ambient Wood (Rogers et al 2002), MOBIlearn (Lonsdale, 2003, 2004), and multimedia tours at the Tate Modern (Proctor and Burton 2003) and elsewhere.

Collaborative: activities that promote learning through social interaction.

Mobile collaborative learning has developed from computer-supported collaborative work and learning and is based on the role of social interactions in the process of learning. Many new approaches to thinking about learning developed in the 1990s, most of which are rooted in Vygotsky's socio-cultural psychology (Vygotsky 1978). Mobile devices can support mobile computer-supported collaborative learning by providing other coordination strategies without attempting to replace any human-human interactions, as compared to say, online discussion boards which substitute for face-to-face discussions (Zurita et al 2003; Cortez et al 2004; Zurita and Nussbaum 2004).

Informal and lifelong learning: activities that support learning outside a dedicated learning environment and formal curriculum. Research on informal and lifelong learning recognises that learning happens all the time and is influenced both by our environment and the particular situations we are faced with. Informal learning may be intentional, for example, occurring through intensive, significant and deliberate learning "projects" (Tough 1971), or it may be accidental and occur as

individuals acquire information through conversations, TV and newspapers, observing the world or even experiencing an accident or embarrassing situation. Such a broad view of learning takes it outside the classroom and, by default, embeds learning in everyday life, thus emphasising the value of mobile technologies in supporting it.

Learning and teaching management: activities that assist in the coordination of learners and resources for learning activities.

Education as a process requires considerable learner and resources management. Mobile devices have been used by teachers for activities such as attendance reporting, reviewing student marks and achievements, accessing central school data and coordinating class timetables and locations. In higher education, mobile devices provide course material to students, including assignment due dates and information about timetable and room changes. Examples using mobile technologies in this context include a mLearning organiser developed and tested at the University of Birmingham (Holme and Sharples 2002; Sharples et al 2003; Corlett et al 2004), and the use of mobile phone technologies to support computing students (Riordan and Traxler 2003; Traxler and Riordan 2003). A blended approach to enabling learning with mobile technologies is necessary as successful and engaging activities increasingly draw on a number of different education theories and practices.

Technologies - Issues in Delivery of mLearning

A connected, mobile society is emerging from the world of the book - with varied information sources and means of communication available at home, work, school and in the community. This has been described as the beginning of the next social revolution. (Rheingold 2003) and with it comes both new capabilities and new expectations. For example, the legacy concept of the PDA as a device to manage personal information has been extinguished and superseded by a realistic opportunity for learners to experience multimedia via their handset, regardless of whether the device is considered primarily a phone or a handheld computer. There is considerable interest in exploiting the almost universal appeal and abundance of mobile devices for their educational use. The Internet is increasingly considered as, and is being used as, an educational tool accessible via these devices. Devices have become more portable, affordable, effective and easy to use and increasingly connect users to a wide range of information services and educational opportunities. They are more cheaply priced than desktop computers, and therefore represent a less expensive method of accessing the Internet, although the cost of connection can be higher. The ubiquitous nature of mobile devices provides opportunities for increasing participation and access to ICT and education, and in particular to utilising services delivered via the Internet.

Increasing access to mobile technologies

There were 91 million mobile phone subscribers at the end of 2004, an estimated 1.5 billion mobile phones subscribers by June 2005, and over 3 billion subscribers predicted by the end of 2010 (Informa, 2005). The Mobile Technologies and Learning Report (Atwell, 2005) states that, in mid-2005, there were more than three times the number of cellular phones per person than personal computers (PCs), and today's most sophisticated phones have the processing power of a mid-1990s PC, and it is increasing. A high proportion of UK residents already have mobile phones (75% of the general population, 90% of young adults; (Crabtree et al 2003)) that can handle both voice calls and

the display of textual information. Many newer phones also have the ability to connect wirelessly to the Internet. PDAs are also becoming more widespread (BBC 2004), being distributed by employers eager to keep their workforce productive whilst on the move. Laptops, though already a well-established technology, have new appeal when combined with the connectivity of newer mobile phones - a laptop can now use a mobile phone to dial-up the Internet and offer a truly mobile web experience. Furthermore, kiosks and information screens are appearing around the UK, and both researchers and industry recognise the potential of these "ambient" approaches to provide rich information spaces.

The Digital Divide: Access, ICT literacy and Information Literacy

Despite the sweeping changes noted in many contexts worldwide, it must be recognised that, although widespread, the impact of ICT, let alone mLearning, has not been universal. To the extent that some individuals and groups do not have adequate access to, or the capacity to use, networked digital technologies, they are effectively "locked out" of significant economic, cultural, social and intellectual activities. In reality there are multiple digital divides which must be attended to in order for the benefits of the knowledge economy to be reaped both individually and collectively. These issues are not specific to mLearning but have become widely acknowledged since ICT has been associated with education. Neither the confidence nor the competence to use digital technologies is universal within the community or in its education sectors. In order to avoid the phenomenon of "information haves" and "have nots", a coherent national strategy is required to achieve ICT literacy for the general population. The ability to make use of online resources entails more than simply ICT literacy; it also necessitates the ability to be discriminating about the information that is encountered online. This emphasises the potential benefits of implementing a national strategy that incorporates both ICT literacy and information literacy.

Content Issues: Available, Affordable, Appropriate

A significant issue for mLearning concerns easy access to available, affordable and appropriate information/content. With the increasing use of mobile devices to access learning materials, educators need a range of learning materials available to provide to users. Much existing learning material was developed for large screen displays on desktop computers and is therefore frequently inappropriate for use on mobile devices with small screens. Also, existing learning materials were typically developed in large sections which may not be suitable for mLearning where smaller information packets are more appropriate. Learning objects suit the mLearning approach and can provide just-in-time learning for students and/or can be linked to form complete sequences, lessons or courses taken for credit. A requirement for successful mobile delivery is that learning objects should be able to be provided as independent components so learners can complete their learning in short spaces of time. Learning materials for mobile devices must also contain visually rich information that is appropriate for display on a mobile device's screen. Graphical strategies such as spatial organisers, graphical outline, pictures and illustrations minimise the amount of reading required on a small screen. In, despite the online content generated, owned or sponsored by Governments and their various education departments and agencies, together with the federated online resource developments of The Learning Federation, limited national networks and

fragmented local access continue to place useful information beyond the reach of many potential users, both in the community and in some schools.

Conclusion

While this review has identified largely government supported mLearning initiatives, it must be acknowledged that there may be relatively little that national governments acting alone can do either to encourage or to support mLearning beyond providing funding to stimulate research and collaboration through project delivery. Empowering learners, amplifying their capacities and strengthening the quality and availability of information provision requires governments to work with businesses, researchers, professional associations, education and training institutions, information providers, communities of interest and others, to provide the best possible conditions for the emergence of a society of learners. Such conditions start with a commitment to the ideal of access to, and strong support for the intrinsic value of learning not only for economic competitiveness but also for personal satisfaction and growth.

The Internet does not belong to any single group and, because it is simultaneously everywhere and nowhere, it does not lend itself to conventional terrestrial legal and political mechanisms. It is vital however, to create a sense of trust in the technology for learning purposes and to protect the interests of the relatively powerless and marginalised against the large players who might seek to exploit the digital domain unfairly or to compromise learners' access to needed information. Governments and other authorities have only limited power to "control" the digital domain through traditional means. Education can benefit from using emerging mobile technologies to deliver learning matched to the increasingly "neomillennial" learning styles of their students. Based on "mediated immersion", these learning styles include:

• Fluency in multiple media and in simulation-based virtual settings, often multi-tasked;

• Communal learning involving diverse, tacit, situated experience, with knowledge distributed across a community and a context as well as within an individual;

• A balance among experiential learning, guided mentoring, and collective reflection;

• Expression through nonlinear, associational webs of representations;

• Co-design of learning experiences personalised to individual needs and preferences.

Many teachers will find this shift difficult, although professional development can accommodate neomillennial learning styles to continue teaching effectively, as the nature of students evolves.

Finally, mLearning is a collection of pieces to be fitted to a learning need, not a single solution. There have already been guidelines developed to support effective implementation of relevant systems and policy. When elearning first became widespread, one of its biggest constraints was the assumption that it could become a solution to all learning problems; that teachers were no longer required, and that anything could be taught using it.

References :

- Attewell, Jill; Manager, Technology Enhanced Learning Research Centre, Learning and Skills Development Agency, (LSDA) UK.
- Burton, Jane; Curator of Interpretation, Tate Modern, UK.

- Colazzo, Luigi; Department of Computer and Management Sciences, University of Trento, Italy
- Corlett, Daniel; Project Manager, Centre for Educational Technology and Distance Learning, University of Birmingham, UK.
- Facer, Keri; Research Director, Futurelab, UK.
- Informa, - publication providing specialist information to the global academic and scientific, professional and commercial communities via publishing, events and performance improvement activities.
- Katz, Heather; Senior Instructional Technologist, Research and Intelligent Decision Systems Inc. USA
- Klopfer, Eric; School of Architecture and Planning, Massachusetts Institute of Technology
- Laouris, Yiannis; Medical Doctor and Systems Engineer, President of Cyprus Neuroscience and Technology Institute, Cyprus.
- Turunen, Hanne; Researcher, Hypermedia Laboratory, University of Tampere, Finland
- www.wikipedia.org