

التعلم المتنقل : دراسة لخبرات بعض الدول

**MOBILE LEARNING: A STUDY
OF SOME
COUNTRIES EXPERIENCES**

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المستخلص:

يتسم عصرنا الحالي بالتنقل؛ حيث تُحمل الجوالات في كل مكان، والبنوك تعمل من خلال الميكنات الآلية المنتشرة داخل الحوايط في الشوارع المختلفة، والسيارات أصبحت مكاتب متحركة، ومقاعد الطائرات أصبحت مراكز للترفيه والمتعة، وألعاب الكمبيوتر دائماً في المتناول. فالأُن الفرصة متاحة لخلق مجتمعات تعلم جديدة ذات طابع خاص، من خلالها يترابط الأفراد في عوالم حقيقية وافتراسية أيضاً، وتقديم الخبرة المباشرة في الكثير من المجالات، ودعم التعلم المستمر. استمد التعلم المتنقل أهميته بوصفه تقنية فعالة لتلقي الدروس و الحصول علي المعرفة؛ حيث تتمثل مصادر القوة الاساسية للتعلم المتنقل في الحصول علي المعرفة في أي وقت و في أي مكان. وحتى نفهم التعلم المتنقل جيداً، ينبغي فصل مكوناته إلى ثلاثة مفاهيم أساسية: المفهوم الأول يرتبط بتنقل التكنولوجيا، والمفهوم الثاني يؤكد زيادة حركة المتعلمين، أما المفهوم الثالث فيهتم بحركة وديناميكية عمليات التعلم ذاتها وتدفق المعلومات. سنتناول الورقة البحثية الحالية النقاط الآتية: مفهوم التعلم المتنقل، ومزايا التعلم المتنقل وعيوبه، وخبرات بعض الدول في التعلم المتنقل.

الكلمات الدالة: التعلم المتنقل-التعلم الشخصي- حركة المتعلم.

Abstract:

We are now entering the mobile age, where phones are carried everywhere, banks are accessed from holes in the wall, cars are becoming travelling offices, airplane seats are entertainment centers, and computer games are handheld. We now have the opportunity to design learning differently: to create extended learning communities, to link people in real and virtual worlds, to provide expertise on demand, and to support a lifetime of learning. Mobile learning is gaining its popularity as it is accepted to be an effective technique of delivering lesson and acquiring knowledge as its main strengths are anytime and anyplace. It can be utilized in many ways in the education industry. In order to comprehensively understand and define mobile learning, we should from the outset separate its key components and arrange them under three different concepts.



The first concept relates to the mobility of the technology. The second concept hinges on increased learner mobility. The third concept examines the mobility and dynamism of the learning processes and the flow of information. The current paper will tackle the following points: What's mobile learning? What're the merits & demerits of mobile learning? Some experiences of some countries in Mobile learning.

Descriptors: *mobile learning-personal learning-learner mobility.*

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١ INTRODUCTION:

Mobile learning is blooming all over the world. They range from the use of Personal Digital Assistants (PDAs) and tablet computers in classrooms, through mobile phones to support learning between schools and museums, to context-aware technology for field trips and tourist visits. One issue that became clear is that mobile learning is not just about learning using portable devices, but learning across contexts. With technology getting smaller, more personal, ubiquitous, and powerful, it better supports a mobile society. What about the impact of mobile devices on the classroom? Mobile devices can support learning in schools, but some argued that they have the potential to render schools obsolete, and several groups explored this tension. ‘Mobile learning’ may be the buzzword of the day, but the emphasis should be on what people learn as much as how they learn. (Walker, 2006).

Increased development in technology coupled with a range of needs and expectations from a range of stakeholders have made it imperative for educational organizations to constantly upgrade their strategies and policies in teaching and learning as a way to remain effective and competitive. The penetration of information technology (IT) has made learners to become increasingly computer literate. (Ziden, & Bidin, 2012)



The increased use of these mobile devices like hand phones, iPad, smartphones, tablets and PDAs is an international phenomenon (Goggin, 2006). Students bring this technology anywhere, at any time for their daily affairs. Educators should look upon this phenomenon as an opportunity though indeed it is a challenge as well. The concept of 'anytime' and 'anyplace' of mobile learning should be utilized in enhancing the pedagogical activities in delivering lessons (Ziden, & Bidin, 2012).

٢ WHAT IS MOBILE LEARNING?

Today's generation who involves in information communication technology has been called: Digital natives' (Prensky, 2001), 'new millennium learners' (Pedró, 2006), 'the net generation' (Tapscott, 1999), the gamer generation' (Carstens and Beck, 2005) and 'generation M' (Rideout, Roberts & Foehr, 2005). One very obvious characteristic of the existence of this generation is they have been socializing in a media-based world (Prensky, 2001; Pedró, 2006; Tapscott, 1999; Carstens and Beck, 2005; Rideout et al., 2005; Montgomery, 1996; Oblinger and Oblinger, 2005) . This generation shares some common characteristics: think and process information very much different from their predecessors', do multitasks, prefer multimedia to written

texts, collaborate and network, want to have fun at work and at school, hence, opt for games than “serious” work and for them speed and innovation are a part of life (Prensky, 2001; Pedró, 2006; Tapscott, 1999).

Obviously, these young people have grown up surrounded by technology, become socially attached to the digital media that causes an increase in socially isolating activities. They use jargons that older generations are not familiar with (Pedró, 2006) and are more comfortable with a customized, collaborative and interactive learning (Sánchez, et al., 2011). All these attributes of the new generation have affected the education industry. The significant growth of wireless and mobile computing technologies has caused the conversion of the delivery of knowledge through the digital learning from distance learning (d Learning) to electronic learning (e-Learning) and ultimately to the mobile learning (m-Learning) model of today. Thus, there is also a need to make a leap in the education industry by suiting the teaching and learning to this generation’s experience and abilities (Walker, 2006).

As a result of the dedicated work of the mobile learning community, in recent years, an explosion in the growth of mobile learning across all sectors of education has been



witnessed. This led to the appearance of different definitions from different angels. Formal definitions from European and Government agencies espouse its relationship to e-learning. Technologists place a high emphasis on novelty and the functionality of the devices (phones, PDAs, iPods, PSPs) themselves. Some researchers focus on the mobility of the learner. Yet others focus on learning in informal settings, leading to juxtaposition between mobile learning. Walker (2006) states that Current perspectives on mobile learning generally fall into the following four broad categories:

- ❖ Technocentric. This perspective dominates the literature. Here mobile learning is viewed as learning using a mobile device, such as a PDA, mobile phone, iPod, PlayStation Portable etc.
- ❖ Relationship to e-learning. This perspective characterizes mobile learning as an extension of e-learning. These definitions are often are all-inclusive and do not help in characterizing the unique nature of mobile learning. What is needed is clarity: in agreement with Traxler (2005), the technocentric e-learning based definitions only seek to place “mobile learning somewhere on e-learning’s spectrum of portability.”



- ❖ Augmenting formal education. In the mobile learning literature, formal education is often characterized as face-to-face teaching, or more specifically, as a stereotypical lecture. However, it is not at all clear that this perspective is wholly correct. Forms of distance education (for example, distance correspondence) have existed for over 100 years leading to the questions regarding the place of mobile learning in relation to all forms of “traditional” learning, not only the classroom. (Peters, 1998).
- ❖ Learner-centered. A strong lineage of research into conceptualizing mobile learning is traceable by reviewing the combined works of Sharples, Taylor, O’Malley and their colleagues. In their early research, the concept of mobile learning was strongly linked to the device (Sharples et al., 2002) and the potential for enabling lifelong learning (Sharples, 2000). However, it soon became clear that rather than the device, the focus should be on the mobility of the learner. This led to considering mobile learning from the learner’s perspective, and to the definition that: “Any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when



the learner takes advantage of learning opportunities offered by mobile technologies” (O’Malley et al., 2003). Current work (Sharples, 2005; Taylor et al., 2006) is exploring the notion of learning in the mobile age, to develop a theory of mobile learning that builds on Engeström’s conceptualization of Activity Theory and Laurillard’s (2002) Conversational Framework. The focus of their work is on mobile learning as communication in context (Sharples, 2005).

٣ MERITS OF MOBILE LEARNING

Merits of mobile devices were further subcategorized into three aspects, namely: usability, technical and functional .

3.1 Usability

From the usability aspect, mobile learning tools are small, light, and portable (Ahonen, et al., 2004; Cavus and Ibrahim, 2009). These features make the learners feel at ease as learning is no longer constraints to the classroom with bulky backpacks containing piles of books and other learning materials. Such freedom makes the process of transmitting knowledge becomes flexible and can be carried out anytime and anywhere.



3.2 Functional

Functionally, the devices can provide instant and spontaneous information (Cavus and Ibrahim, 2009; Eteokleous and Ktoridou, 2009; Carsten, 2010). There are times when learners really need to get certain information fast. For example, quick answers to specific questions as definitions, formula and equation. The devices will help the learners to quickly search such information. Continuity is another functional aspect. Mobile learning is a learning model that allows the learners to gain learning materials anywhere and anytime. To be able to continue with the learning without the constraints of time and location is an important element that affects how learners may be motivated to use their mobile applications (Lan & Sie, 2010). Learners' access to information and learning material does not necessarily stop because of their location. Indeed learners can access and interact at various places and in a variety of situations.

3.3 User's expectations

3.3.1 Ownership

Naismith and Corlett (2006) surveyed many successful mobile learning projects in the proceedings of the Mlearn conferences from 2002-2005, and identified five critical



success features. One of five crucial factors mentioned in the study is ownership. From the point of view, learners will active in communication and learn much better when they either own the learning tool or treat it as if they own it (Luckin, et al., 2004; Attewell & Webster, 2005).

3.3.2 Privacy

In comparing mobile devices with other computing devices (such as laptop and PC), of course, the former offers the learners a sense of privacy. Mobile applications provide the private virtual world to the learners that make them feel safe and motivated. Having a sense of privacy will provide many reasons for learners to interact with the device. The learners can access information and download independently from other learners (BenMoussa, 2003; Zhang, 2003; Virvou & Alepis, 2005).

3.3.3 Self-Regulated learning (Control over learning)

Researchers stress the importance of allowing learners to exercise more control over their own learning. The learners are more likely to attend to learning experiences if they are encouraged to take a more active role in their learning (Watts, 1997; Selfe, 1999). Mobile learning opens up the opportunity for the learners to be at the center of the learning process, play



an active role starting from determining their goal until the evaluation stage (Makoe,2010) Once they are actively engaged with the task, they are more likely to develop learning strategies that will aid their learning development, hence, contribute to their motivation. Unlike other digital media, a mobile device can be carried around all the time and gives its users great amount of control over how and when to access their mobile devices.

3.3.4 Flexible learning

High mobility of learners today makes flexible learning imperative. Mobile learning opens up more opportunities for learning to take place regardless of place and time. The learners have the freedom to exist in different location than the teachers, to study at their own pace and time provided that they have the hardware and network infrastructure (Cavus &Al-Momani, 2011).

3.3.5 Life-long learning

Due to the current economic, social change, and transition to knowledge-based society, life-long learning has become a critical national agenda in most countries. Mobile learning is seen as one tool that can materialize lifelong learning.



3.3.6 Fun

Games are considered as an important factor affecting the usage of mobile applications. Prensky (2007) argues that digital games are not just for fun, or for basic review of school subjects, they can also be used solely for learning. The learners learn all the skills that are embedded in each level in the game, become engaged and motivated and do not realize that they are in fact learning. This is where Prensky argues that as learners play the game, they feel a rush and engagement they do not normally feel while ‘learning’ in school. Thus, these digital games have become the substitute to a world of learning where everything learners learn is old-fashioned, and simply boring. Become more motivational. It attracts learners and motivates them. Jones et. al.(2006) mentioned that the main reasons for mobile learning to be motivating representing in :

- Control (over goals)
- Ownership
- Fun
- Communication
- Learning-in-context
- Continuity between contexts



It had been argued in the initial presentation that the association between the use of mobile devices and informal learning was salient because learners often find their informal learning activities more motivating than learning in formal settings such as schools because they have the freedom to define tasks and relate activities to their own goals and control over their goals. By the very nature of informal learning, there is a strong relationship to learners' goals and interests which means that intrinsic motivation is likely to be high.

However, the locus of such control varies with age and with setting. In formal settings (e.g. schools), not only is there usually less control over learning activities and goals but it also varies with age, with younger children usually having much less control, and older children more freedom. The traditional separation between extrinsic and intrinsic motivation (e.g. learning in order to get grades as opposed to having a deep interest in what is being learnt) is not always sustainable. Activities that start off being externally motivated may change as the learner discovers they have a passion for the particular topic they have been set. Feeling in control matters.

The issue of ownership was also perceived to be a powerful motivational force. Ownership of learning has been highlighted in research on motivation as a key motivational feature and also in mobile learning research. However, it was suggested that it did not straightforwardly own the device that mattered so appropriation might be a better concept. Waycott (2004) has applied an activity theory approach to analyzing the way in which learners use and adapt mobile devices, in this case PDAs, for activities in different settings including the workplace, formal learning and museum visits. She defines appropriation as the integration of a new technology into the user's activities. Her analysis revealed a two way process in which the user adapts the tools they use according to their everyday practice, prior expectations and preferences in order to carry out their activities and how, in turn the tools also change the user's activities. Having the appropriate mobile device and using it for appropriate activities was viewed as being a very important part of constructing an appropriate "cool" identity in particular for young mobile users. There are usability and cultural issues related to coolness, for example understanding trends in youth culture. Who are the trend setters and the trend followers? Who are the geeks? The context of use is also important.



3.4 Demerits of mobile learning

As anything in the world, mobile learning has its merits which cannot be overlooked as well as demerits which can't be ignored. Its demerits can be classified according to: usability, technical issues and users' expectations.

3.4.1 Usability

The first issue of usability is the small screen size. The current mobile devices are designed with the focus to allow users to enter and access structured data like contacts, lists, dates, financial information, and memos, to send and receive messages, to view documents and pictures, or to access the web (Kukulaska-Hulme, 2005). A study on using a PDA for learning purposes revealed difficulties in reading due to the poor screen display (Trinder, Magill and Roy, 2005). The small, touch-sensitive screens of smartphones can pose problems in navigating the screen with fingers and learners may accidentally select a function such as deleting a document. Secondly, the cognitive and ergonomic issue (Kukulaska-Hulme & Traxler, 2005) which is related to the conceptions of differences between using PCs and mobile devices, print material and electronic small size depictions of large texts. Ergonomic issues include the fear of deleting diary entries from the device. Both cognitive and ergonomic issues could



pose challenges for users as they use mobile devices and they may require a learning period to get used to the devices. Thirdly is the lack of consistent design scheme. There is no universal platform exist between mobile devices because each manufacturer develops their own unique user interface (Kukulska-Hulme,2005). The compatibility problems should be resolved because we cannot expect the learners to manoeuvre among the devices to find the most suitable one for the school projects. Besides, there will be problems in synchronizing the students' projects via mobile devices and later in assessing them. Mobile learning has to be restrained to spaces where compatibility problems will not surface.

3.4.2 Technical

There are several technical issues. First is the connectivity issue that refers to the issues of connectivity in certain places, and issues of intuitive integration between the hardware and the software of the device (i.e., the mouse wheel, soft keys, etc) (Nielsen, 2003). A study indicated that the respondents had problem with PDAs because of slow transmission (Smørdal, Gregory &Langseth, 2002). They also emphasized that the e-book material that was made available was not useful, nor was the use of messaging services for collaborative learning. Besides, they also experienced



problems working across different applications. Secondly, the life of the batteries in which downloading educational applications and games uses up batteries much quicker especially when using free apps (Morg, 2012). Studies discovered that the battery's energy continues to be drained even after the downloading of information has completed. The issue of battery life is still something of a challenge when incorporating the devices into the curriculum as the learners may not be alert enough about this matter, continue playing game to the utmost, forget to shut down and thus, when the time comes for learning to take place the batteries diminish. Issue of accessibility is another one that educators must be well aware of. Different devices may have similar or different accessibility features. Today, it is a blessing for the special needs learners as there are innovative work in accessibility for example, braille mirroring.

Teachers have to ensure every student will benefit from the devices at hand or else equal alternatives for those unable to maneuver the technologies should be provided. Apart from that, there is an issue of security, safety, theft and loss. Cyber-crimes are becoming a threat as technologies flourish. Personal and company data are usually stored in the mobile gadgets for ease of use when the need arises. Being small and portable



makes the gadget relatively easy to lose or steal. The data can be stolen even when you use the device (Yeaton, 2012). Cases of stalking, identity theft and cyber-bullying are happening and there is no standard way of protecting the users. Users are only advised of the risks and given tips on how to minimize. How responsible, ethical and safe the learners use the device is also another issue that need to be considered. Last but not least is the issue of storage. Another weakness of mobile devices is the inability to hold a lot of data which has caused many people to turn into cloud computing. However, this public cloud services have also proven not safe. May 2012, IBM decided to roll out a bring-your-own-device (BYOD) policy and banned the use of Dropbox due to hackers (Mearian, 2012). Following this, educators have to strategize their lessons well especially when dealing with limited storage capacities.

3.4.3 User's expectations

3.4.3.1 Cost

To incorporate smartphones, MP3 players, laptops, or other mobile devices into the hands of every learner would definitely be costly even though mobile devices cost lesser than personal computers. It will take much funding and grants to make mobile learning a more accessible option for many classrooms. In reality, to successfully materialize mobile

technology initiatives, a lot of expenses have to be rendered on stuff far beyond just the cost of the devices. The greatest expenses come from resources needed like the cost of developing and deploying mobile learning systems which can be broken down into: content development costs, teaching costs, software development costs, hardware costs, usage costs, for example, phone charges (Traxler, 2004).

3.4.3.2 Blockage

Teachers need to get themselves clear with the school's policy regarding social media like Facebook, Twitter, and others before they actually come up with their teaching and learning strategies that utilize such media. This is to avoid frustration on both parties (teachers and students) if schools block such sites.

3.4.3.3. Obsolescence

No one can be certain as to how much more technology is going to evolve in the future. One thing that we can be certain is the improvement makes the newer devices can do more, have better and improved capabilities and priced affordably. The older version can be technically and/or functionally obsolescence (Bidin& Ziden ,2013). Thus, the lessons that the teachers come up today on digital literacy for instance, might wrap up futile as new options might just pop-up weeks after



they master a particular device. It is indeed a challenge to keep abreast with technology.

- Potential for students to become distracted, diminishing educational engagement.
- negative effects on children's writing.
- Enablement of cheating via text messaging.

4. EXPERIENCES OF SOME COUNTRIES

Some local authorities and schools are investigating the use of handheld technologies for a range of different teaching and learning purposes. A group of teachers in California for example, is using iPod devices paired with Belkin recorders to improve student reading. They've observed that struggling students show increased motivation to improve fluency skills when they hear what they sound like reading aloud. Other innovative teachers are tapping into popular mobile trends to deliver more powerful instruction. North Carolina's 2008–2009 teacher of the year asks her sixth- and seventh-grade students to translate passages from classic literature into “texting speak” to demonstrate their comprehension and to create a kind of multilingual focus, similar to how learning a



foreign language can enhance a student's understanding of his or her native tongue (Bernard, 2008).

The use of handhelds for learning is not only an American trend; other nations are attempting to capitalize on these devices as well — some in ways strikingly ahead of the U.S. As the University of Nottingham's Mike Sharples, founder of the mLearn international conference series, told us, "Because of differing cultures, history, and infrastructure, countries around the world have differing perspectives on mobile learning." In the U.S., mobile devices have primarily been explored via small-scale projects in formal environments. The U.K., on the other hand, has mainly focused on learning outside of school, or learning that bridges the formal and informal .Its largest is currently being scaled up to impact the entire district of Wolverhampton. In parts of Africa such as Nigeria, where there is virtually no fixed-line infrastructure, mobile learning often consists of using standard cell phones for managing, coordinating, and administering learning. In Japan, where many families don't have home desktops, cell phones have been used as the main computing device for quite some time. And countries such as Chile are doing advanced research into how handheld devices may be used for collaborative learning .The good news, as Sharples further

articulated is that “we are starting to get a global perspective on mobile learning. National examples are being shared. There is a real opportunity to learn from each other in this field.”

This project offered tutors in five further education colleges the opportunity to create mobile learning materials for their students which catered for their specific needs in their particular context. A quarter of the tutors had not used a palmtop computer previously. A wide variety of learning materials were created with most tutors and students demonstrating great enthusiasm for mobile learning. Mobile learning was found to have an impact on teaching and learning because it adds another dimension and additional resources to the teaching and learning process. It has an impact on teaching because it is a novel way to consolidate and assess knowledge. The personal nature of mobile learning and the interactivity can encourage learner involvement and engagement. Mobile learning has a positive impact because students can study anywhere with immediate feedback and become more autonomous learners. The mobile learning toolkit, the learning materials and activities designed with it were easily integrated into lessons and can be used for other purposes, such as extended learning activities, formative assessments to check

that learning has taken place, question-and-answer sessions and homework.

As a result of taking part in this project, most tutors (18 out of 19) stated that they were keen to continue using the mobile learning teachers' toolkit with their students in the future. One of the tutors who took part commented: The use of the mobile toolkit brought about a change of mindset in how the students could get involved. Mobile devices were, instead of being a distraction, now being brought in by the students to the learning environment. A useful device that could engage the student in learning. (Smith, et al., 2006).

A project in UK has developed prototype products and innovative approaches designed to support learning – particularly literacy, numeracy and life and survival skills – using handheld devices such as mobile phones and palmtop computers or pocket computers. A key objective is to engage with and motivate young adults who are not taking part in education or training including those who are unemployed homeless or disadvantaged. (Webster, 2004).

In King Saud University, Faculty of education, mobile learning has been applied, the sample of the study consisted of twenty four students. They were taught using mobile learning. They used SMS/MMS technique in teaching. They've received



four kinds of SMS: short content (scientific concept encouraging deductive thinking)–reminders (remind them of homework and next lectures)-short tests (questions that need short answers to be sent within 24 hrs.),other messages (ads, motivators and encouragement.) (Al-Harithy,2009).King Abdel Aziz University has applied mobile learning as an alternative of electronic learning as a type of distance education for students from far areas in which there are no infrastructure for sets and equipment .

5. Recommendations

According to the abovementioned knowledge concerning mobile learning, the researcher suggests the following:

- Understand mobile learning as a unique element of education reform.
- Build mobile learning interventions
- Engage the public and policy-makers in defining the potential of mobile devices for learning.
- Train teachers and learners to effectively incorporate mobile technologies.
- Generate new leadership support for digital learning.
- Encourage "anytime, everywhere" type of learning.



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