

Mobile technologies in education



Natalia Kiyanovska

*Assistant professor,
PhD of Higher Mathematics Department
State Higher Educational Institution
“Kryvyi Rih National University”,
Ukraine*



Natalya Rashevskaya

*Associate professor,
PhD of Higher Mathematics Department
State Higher Educational Institution
“Kryvyi Rih National University”,
Ukraine*



Viktoriia Tkachuk

*Assistant of Engineering Pedagogy and Language
State Higher Educational Institution
“Kryvyi Rih National University”,
Ukraine*

Abstract

This preliminary study employed mixed methodologies to explore students' use of mobile computing devices and its effects on their motivation to learn, engagement in learning activities, and support for learning processes. The main aim of this research is to better understand and measure students' attitudes and perceptions towards the importance of mobile learning in distance education. Results of this survey clearly indicate that facilitating mobile learning can improve the entire distance education by enhancing ways of communication among distance learners, tutors and supporting staff. The biggest advantage of this technology is that it can be used anywhere, anytime and its usage is easy access to a larger number of distance learners.

Keywords: MOBILE LEARNING, M-LEARNING, COVERING PROBLEMS OF DISTANCE LEARNING, IMPROVING DISTANCE LEARNING, ARCHITECTURES FOR EDUCATIONAL TECHNOLOGY SYSTEMS, HUMAN-COMPUTER INTERFACE, INTERACTIVE LEARNING ENVIRONMENTS, LIFELONG LEARNING

In agency of the UNESCO mobile learning is defined as involves the use of mobile technology, either alone or in combination with other information and communication technology (ICT), to enable learning anytime and anywhere. Learning can unfold in a variety of ways: people can use mobile devices to access educational resources, connect with others, or create content, both inside and outside classrooms. Mobile learning also encompasses efforts to support broad educational goals such as the effective administration of school systems and improved communication between schools and families [6, p. 6].

Mobile technologies offer a new paradigm in connectivity, communication, and collaboration in our everyday lives. For education, these are huge opportunities to provide an experience that is relevant and engaging. Using technology in the classroom is not a new idea at all. Computers, laptops, and netbooks have all been added to classroom settings with the hopes of revolutionizing education, promising vast improvements to student outcomes. These technologies, largely, have left education unchanged and in a continual state of need for improvement. The first major benefit is the ability to learn on the go. Traditionally, sitting in a classroom between the hours of 8 a.m. and 3 p.m. is where and when we expect students to learn [3].

In the word m-learning “m” stands for “mobile”, representing the back-stage mobile delivery technology. It is obvious that for the expansion of the idea of learning and the creation of learning schemes that are based on the effective use of motivation that arises when student is faced with the stimuli, mobile devices with Internet access can offer significant advantages. Mobile technology actually offers the appropriate educational environment to assist learning activities both inside and outside the classroom. Opposite to the limitations of working and learning only in the classroom or in the lab, mobile technology offers access to learning material regardless of location and time. In this framework mobile learning is translated into flexibility in accessing learning materials but also classmates and teachers anytime, anywhere. Mobile learning is the ability to enjoy an educational moment from a cell phone or a personal digital assistant [2].

Mobile learning is a new way of learning. Mobile devices including handheld computers, mobile pho-

nes and smartphones make learning portable, spontaneous, personal and exciting. This book explains the technologies involved, their applications and the multiple effects on pedagogical and social practice. Emphasising the issues of usability, accessibility, evaluation and effectiveness, and illustrated by case studies drawn from contemporary projects from around the world, this book considers:

- the fundamentals of mobile technologies and devices;
- the educational foundations of modern networked learning;
- the issues that underpin mobile learning and make it accessible for all users;
- the challenges of making mobile learning a substantial and sustainable component in colleges, universities and corporations;
- implications and issues for the future [2].

Mobile learning is defined as the provision of education and training on mobile devices: Personal Digital Assistants (PDAs), smart phones and mobile phones. One of the characteristics of mobile learning is that it uses devices which citizens are used to carrying everywhere with them, which they regard as friendly and personal devices, which are cheap and easy to use, which they use constantly in all walks of life and in a variety of different settings, except education. There are several advantages inherent in mobile learning [10]:

- helps learners to improve literacy and numeric skills;
- helps learners to recognize their existing abilities;
- can be used for independent and collaborative learning experiences;
- helps learners to identify where they need assistance and support;
- helps to overcome the digital divide;
- helps to make learning informal;
- helps learners to be more focused for longer periods;
- helps to raise self;
- esteem and self;
- confidence.

Mobile learning is caused by conditions and level of development of modern information and communication technologies, state of modern education, stu-

dent's desire to be an active participant in learning process and get knowledge anywhere and anytime. The terms of the mobile learning in high technical institutions are: free Internet access availability; spread of mobile devices among the students; readiness of support mobile learning systems; transfer to a mixed model of learning; development of method of learning systems is based on the mobile technology [4].

John Traxler in looking at the public domain (Kukulka-Hulme & Traxler, 2005; JISC, 2005; Attewell & Savill-Smith, 2004), determines categories of mobile learning emerging:

- technology-driven mobile learning – some specific technological innovation is deployed in an academic setting to demonstrate technical feasibility and pedagogic possibility;

- miniature but portable e-Learning – mobile, wireless, and handheld technologies are used to re-enact approaches and solutions already used in 'conventional' e-Learning, perhaps porting some e-Learning technology such as a Virtual Learning Environment to these technologies or perhaps merely using mobile technologies as flexible replacements for static desktop technologies;

- connected classroom learning – the same technologies are used in classroom settings to support collaborative learning, perhaps connected to other classroom technologies such as interactive whiteboards;

- informal, personalized, situated mobile learning – the same technologies are enhanced with additional functionality, for example location-awareness or video-capture, and deployed to deliver educational experiences that would otherwise be difficult or impossible;

- mobile training/ performance support – the technologies are used to improve the productivity and efficiency of mobile workers by delivering information and support just in-time and in context for their immediate priorities;

- remote/ rural/ development mobile learning – the technologies are used to address environmental and infrastructural challenges to delivering and supporting education where 'conventional' e-Learning technologies would fail, often troubling accepted developmental or evolutionary paradigms [5].

The infographic below was developed by the Australia-based organization, Open Colleges, while fairly meaningless on their own, do present an attitudinal:

- 59% of students said that they would like to bring in their own mobile devices to enhance learning;

- 86% of students believe they study more efficiently with access to mobile technologies;

- 77 % of teachers believe that access to technology boosts student motivation;

- 76% of teachers feel it enhances the material that is being learned.

To capitalize on the advantages of mobile technologies, teachers need to be trained to successfully incorporate them into pedagogical practice. In many instances, a government's investment in teacher training is more important than its investment in technology itself. Research of UNESCO has shown that without guidance and instruction teachers will often use technology to 'do old things in new ways' rather than transform and improve approaches to teaching and learning, recommendations:

- prioritize the professional development of teachers. The success of mobile learning hinges on the ability of teachers to maximize the educational advantages of mobile devices;

- provide necessary technical and well as pedagogical training to teachers when introducing mobile learning solutions and opportunities. While many teachers know how to use mobile devices, many do not, and as devices grow more versatile and complex they tend to become more difficult to use;

- encourage teacher training institutes to incorporate mobile learning into their programs and curricula;

- provide opportunities for educators to share strategies for effectively integrating technology in institutions with similar resources and needs [6].

A theory of learning must be based on contemporary accounts of practices that enable successful learning. The US National Research Council produced a synthesis of research into educational effectiveness across ages and subject areas. It concluded that effective learning is [7]:

- learner centered: it builds on the skills and knowledge of students, enabling them to reason from their own experience.

- knowledge centered: the curriculum is built from sound foundation of validated knowledge, taught efficiently and with inventive use of concepts and methods.

- assessment centered: assessment is matched to the ability of the learners, offering diagnosis and formative guidance that builds on success.

- community centered: successful learners form a mutually promotive community, sharing knowledge and supporting less able students.

Therefore we decided to use Moodle in teaching engineering students in the State Higher Educational Institution "Kryvyi Rih National University". We have created mobile courses in mathematics that help

students to improve their knowledge of course, check their level of preparedness for the classroom lessons, the writing module works. The created tests make possible to find the gaps in students' knowledge on a specific topic of the course. So, the best and worst thing about Moodle is its complexity – there are so many features and settings that you can make Moodle do and look like whatever you want, but it can be a bit overwhelming for a teacher new to using an LMS [10].

What we must remember is that teachers must be evaluated, when they adopt new technology and services. Staff will need training, you can't expect staff to use new technology if they are not confident users or creators. Any initiative is doomed to failure without well trained, confident staff who can see how technology can support and benefit teaching and learning. We have developed some a general rules for using technology in teaching students. These rules are as remote course for university teachers (<http://vtutor.ccjournals.eu/course/view.php?id=4&lang=en>). Everyone can take a course after registration.

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