

## Chapter 106

# Quality Enhancement for Mobile Learning in Higher Education

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### ABSTRACT

*Students entering higher education today have grown up with the Internet and mobile devices. Thus, there is a need for universities to offer a greater mix of face-to-face and online learning possibilities, such as Open Educational Resources (OER) and Massive Open Online Courses (MOOCs) that allow individuals to access education anywhere, anytime, and to have it personalized through apps. This chapter focuses on mobile learning (M-learning) in open learning educational arenas and contexts. The author defines M-learning and the usefulness of M-learning in education. Then some examples of mobile devices and principles of M-learning are given, and some design examples of M-learning are presented. Next, the advantages and the use of M-learning in education are discussed. As quality of e-learning and M-learning is a complex subject, this chapter focuses mainly on quality and a frame of reference to understand M-learning dimension concerns as course design, learning design, and media design and content. Consistent layout and design, clear organization, presentation of information, consistency, easy-to-use navigation, and aesthetically pleasing design and graphics are dimensions that also have to be taken into consideration. It is argued in this chapter that security, accessibility, interactivity, flexibility, personalization, and the devices and interfaces are the main quality dimensions. In the final section, challenges and conclusions are discussed.*

### INTRODUCTION

Education, particularly higher education, is facing challenges largely because digitalization in society has grown and because society now fosters digital citizenship to a greater extent. Daily life, schools, and work have also become more mobile through

the Internet, which is available everywhere, at any time, and on a variety of mobile devices that can be tailored and personalized through apps.

In the European Union (EU), the number of students is set to rise significantly in the next decade; the same is predicted in the rest of the world. These students have grown up with the

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Internet and mobile devices in school and in daily life. This way of living and learning has been internalized in their mindset and habits. Therefore, universities need to adapt traditional teaching methods and offer a mix of face-to-face and online learning possibilities, such as open educational resources (OER) and massive open online courses (MOOCs), which allow individuals to access education anywhere, anytime, and with any device. Many universities are unfortunately not ready for this change. To meet such demands and challenges, the EU launched in 2013, the joint initiative *Opening up education to boost innovation and digital skills in schools and universities*. It is led by Androulla Vassiliou, Commissioner for Education, Culture, Multilingualism and Youth, and Neelie Kroes, Commissioner for the Digital Agenda. The initiative focuses on three main areas:

- Creating opportunities for organizations, teachers and learners to innovate,
- Increasing use of OER and ensuring that educational materials produced with public funding are available to all, and
- Providing better ICT infrastructure and connectivity in schools (European Commission, 2013a b).

Commissioner Vassiliou stressed that:

*The education landscape is changing dramatically, from school to university and beyond: open technology-based education will soon be a “must have”, not just a “good-to-have”, for all ages. We need to do more to ensure that young people especially are equipped with the digital skills they need for their future. It’s not enough to understand how to use an app or program; we need youngsters who can create their own programs. Opening up Education is about opening minds to new learning methods so that our people are more employable, creative, innovative, and entrepreneurial (European Commission, 2013a b).*

Vice-President and Commissioner Kroes added:

*My dream is to have every classroom digital by 2020. Education must be connected to real life; it cannot be a parallel universe. Young people want to use digital technology in every aspect of life. They need digital skills to get jobs. All of our schools and universities, not just some of them, must reflect that reality (European Commission, 2013a b).*

What exactly is the meaning of opening up education? Opening up education means bringing the digital revolution in education and opening up a variety and new learning and educational arenas (European Commission, 2013a b). Through the Internet and digitalization, global knowledge and networking are just a click away, everywhere, and all times. Distances in the world are shrinking. Formal and informal learning are also more and more integrated on a daily basis for individuals (Creelman, Ossiannilsson & Falk, 2014). Information, knowledge, contact with academic professionals, and networks are available anytime, anywhere, and for everyone via all kinds of devices and technical support. Due to the increasing use of M-learning the last couple of years, design, and quality issues for M-learning have become more important for personalization and collaboration and also for competition. Thus, universities need to collaborate, and, at the same time, they have to compete. New learning paradigms, such as connectivism (Siemens 2005), learning by design (Conole, 2012; Laurillard, 2012; Ponti, Bergquist & Ossiannilsson, in press) and teaching as a design science (Laurillard, 2012), are also increasingly taken into account, and they are highly valued and mainstreamed in higher education contexts and arenas.

This chapter will focus on M-learning in open learning educational arenas and contexts. The background above was given as an introduction

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