Chapter 6
Visualizing the Evolution of Mobile Learning Research

Hüseyin Özçınar
Pamukkale University, Turkey

ABSTRACT

The aim of this chapter is to investigate the scope and change of m-learning literature over a period of thirteen years. The chapter takes an author co-citation approach where patterns are revealed in m-learning publications between the years 2002 and 2015. The author co-citation analysis is a kind of bibliometrics, and Power Flow Network Library (PFNET) analysis method to obtain the intellectual structure of the m-learning field. A PFNET is a psychometric scaling method where a network of associative nodes is generated using specific values. The method is based on graph theory and has been used to explore knowledge connections. The method is referred to as a pathfinder network for representing segments of knowledge in a branched manner. The method can also be used for developing consensus building or recognizing expertise in a specific area. In this study, it was found that the m-learning research focus on design and effectiveness of m-learning environments, developing a pedagogic framework for m-learning, adoption and proliferation of m-learning-assisted language learning, collaborative m-learning, and augmented reality. Assessing the results of factor analysis together with the PFNET graphics, the subfields show the fundamental orientations of the field, and the main themes will be the focus of future research.

DOI: 10.4018/978-1-5225-9351-5.ch006
INTRODUCTION

Rapid developments in information and communication technologies (ICT) has had an impact on education and learning just as in other areas of life. Today mobile technologies are widely used in transforming education and learning. In a similar vein, conducting research on mobile technologies is one of the main research trends in educational technology journals (potential citation needed or rephrase). Considering there was limited research conducted on mlearning (or mobile learning) ten years ago (Hung and Zhang, 2011), with the rapid growth and adoption of mobile devices, one can clearly understand the rapid change in this research area. As Naismith et. al. (2004), Sharples, Taylor and Vavoula (2005) stated, there is a co-evolution of learning and mobile technology.

There were previous studies that reviewed mobile learning research area. For example, Naismith et. al. (2004) focused on theories supporting mlearning and mlearning examples. Mentor (2016) contends that the examples supplied in Naismith et.al. had unintended social connectedness embedded in its approach leveraging the main facets of mobile communication to build portable communities. Hung and Zhang (2011) studied the research trends in mlearning research area using text mining technique. Data for Hung and Zhang’s (2011)study consisted of 119 articles and conference proceedings that were published between the years 2003 and 2008 and indexed by SCI/SSCI database. Hung and Zhang (2011) investigated the publication date, publication journal, country and institution of origin and research themes. A rapid increase in mlearning publications found Taiwan and the USA are the most prolific countries in some areas of mobile learning. Main mobile learning research themes in their study were effectiveness, evaluation, and personalized systems.

To analyze mlearning literature, Wu et al. (2012) conducted a meta-analysis study on 164 articles which had been published between the years 2003 and 2010. Research results showed that mobile phones and Personnel Digital Assistants (PDAs) at that time, were the most widely used devices for mlearning, while effectiveness and system designs were the most prolific research themes. These studies shed light on the structure of the field between the years 2003 and 2010.

In a more recent study, Hwang and Wu (2014) determined 214 publications published between 2008 and2012 on mlearning indexed 7 journals publishing research on technology-enhanced learning. They investigated these publications in terms of learning domain, context of mobile learning, and the type of mobile devices adopted. At the end of the research, they reported that mlearning holds significant promise for the future in terms of increasing academic success, raising interest and motivation towards learning on condition that satisfactory support is granted for the learners and suitable strategies are used during the learning process. Other
Related Content

Mobile Portal Technologies and Business Models
www.igi-global.com/chapter/mobile-portal-technologies-business-models/26547?camid=4v1a

Enabling Technologies for Mobile Multimedia
www.igi-global.com/chapter/enabling-technologies-mobile-multimedia/17087?camid=4v1a

Exploring Personal Mobile Phones and Digital Display Systems to Support Indoor Navigation by Formative Study Methods
www.igi-global.com/article/exploring-personal-mobile-phones-digital/46086?camid=4v1a
Headache App: Usability Assessment and Criterion Validity

[www.igi-global.com/article/headache-app/205676?camid=4v1a](www.igi-global.com/article/headache-app/205676?camid=4v1a)