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ADVANCING HIGHER EDUCATION WITH MOBILE LEARNING TECHNOLOGIES

by

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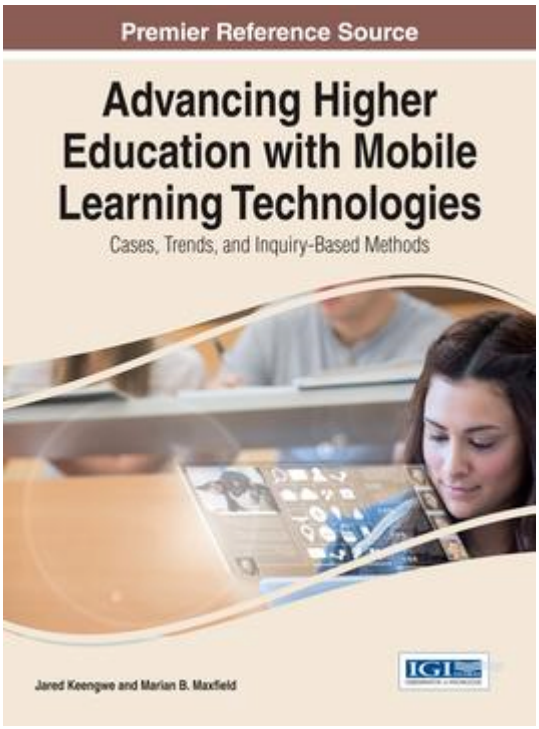

Edited by the leading experts in the field of Mobile Learning Technologies (MLTs), this book specifically focuses on the practical and theoretical applications of MLTs in diverse countries and contexts at various levels of application (especially tertiary), along the lines of constructivist/inclusive curriculum design, instructional MLT implementation and integration, pedagogical frameworks/ models innovative mLearning methods, digital reading, Web 2.0 technologies, and teacher development. As such, the book provides a solid and comprehensive overview of the MLTs (or mLearning), with concrete applied experiences from the field helping readers have a high-resolution mental map of the mobile learning topography, enabling a deep grasp of the field. MLTs are deeply analyzed from multiple perspectives in 15 chapters. The book synthesizes a wide range of findings and opinions of researchers, scholars, practitioners, teacher educators and innovators from different nations in the light of their discussion centering on the key issues regarding the current status, possibilities, advantages, drawbacks, concerns, and limitations of MLTs. These key issues are covered in detail in 15 different chapters, as follows:

Chapter 1:
Mobile Social Media as a
Catalyst for Collaborative Curriculum Redesign
by Thomas Cochrane, Matthew Guinibert, Clinton Simeti & Ross Brannigan
Chapter 1 primarily explores the possibilities of using mobile social media to redesign collaborative curricula.

Discussing the advantages and shortcomings of a case study involving participatory action research where mobile social media are used for creative pedagogies in the context of New Zealand, the authors explain its possible implications for broader instructional contexts. They arrive at the conclusion that an effective mobile social media framework needs to satisfy three fundamental conditions: a) model how to build learning communities, b) explore the unique pedagogical possibilities allowed by mobile social media, and c) set up the necessary technology infrastructure to support such new possibilities. The authors themselves clearly model the specific types of mobile social media activities and assessments by using a modified version of Luckin et al. (2010)'s framework including pedagogical, andragogical, and heutagogical dimensions, supporting it with redesigned assessment criteria, and explicating the key principles involved in its implementation.

Chapter 2:
Developing Faculty to Effectively Use
Mobile Learning Technologies in Collegiate Classes
by Richard E. Newman, Michael T. Miller & Kenda S. Grover
This chapter discusses the difficulties encountered by higher education faculty in effectively using mobile technologies and proposes strategies to create faculty development programs to encourage the use of MLTs and bridge the gap between the two extremes (positive vs negative) of faculty approaches to MLTs.

First outlining the challenges of using MLTs in higher education, the authors lay out Coyne-Smith (2012)'s five-step plan for successful faculty development, including the steps of launching a conference, tying mobile learning to institutional academic vision, enabling faculty "ambassadors" for technology maximization, linking technology to learning effectiveness, and dedicating time/resources to MT adoption. The authors stress that successful faculty adoption of MLTs is a continuous, collaborative, and intentional process in which department chairs play a key role as leaders.

Chapter 3:
A Case Study of Developing Suitable
Mobile Learning Technology for a Distance Learning Masters Programme
by Tracey Dodman, Terese Bird & David Hopkins
This chapter describes a distance learning course designed to ensure continuation of learning in an environment where reliable internet connection was not available. The course-takers were given an Apple iPad and instructed to download a Course App with rich multimedia.

Through this innovative course design, learners were able to learn on the move and their learning capacities were enhanced. The authors illustrate their course development through figures of modules/learning resources and present a workflow chart, and include comments from students who have taken the course, which are mostly positive.

Following their recommendations and solution for the specific problem that arose during the implementation of the course, the authors then go on to conclude that the students responded very well to this mode of instruction and had lower attrition rates and higher scores in the formative assessments compared to the other distance learning programs.

Chapter 4:
Mobile Learning
by Chien Yu, Sang Joon Lee & Carlos Ewing

This chapter presents of overview of MLTs regarding the trends, issues and challenges in teaching and learning. The authors discuss both the benefits and strategic uses of MLTs. By reviewing the relevant literature on mobile learning the authors outline the current trends and issues in the development of mobile learning and challenges in its pedagogical implementation. Specifically, the authors discuss teacher and students perspectives on MLT, learning theories and conceptual frameworks/models regarding ML, changing e-learning platforms, and address potential problems in design, usability, security/privacy, ethics, infrastructure, and cost. They conclude by underscoring the importance of having well-defined principles of mobile learning pedagogy and applying multiple pedagogical strategies.

Chapter 5:
Teacher Development, Support, and
Training with Mobile Technologies
by Nance S. Wilson, Vassiliki (Vicky) I. Zygouris-Coe & Victoria M. Cardullo

Using Wilson et al.'s (2013) M-TPACK framework, the authors of Chapter 5 focus on teacher education by describing how to benefit from iPads to develop and support pre-service teacher metacognition. Through authentic examples, images, and figures they illustrate how they helped pre-service teachers to develop a *Metacognitive Technological Pedagogical Framework* (M-TPACK), which in turn facilitated the implementation of their knowledge about content, technology, pedagogy, and students by pulling them all together in a meaningful synthesis.

The authors further provide a list of activities to promote positive teacher dispositions toward technology integration in teaching and support teacher self-efficacy. Following some useful tips on how to develop teachers' content knowledge, pedagogical knowledge, technological knowledge and knowledge of students, the authors then conclude by saying that MLTs "can offer teachers a flexible, relevant, personalized, metacognitive, and innovative way to teach."

Chapter 6:
Using Mobile Technology for Student Teaching
Observations of Special Education Candidates

Stressing the importance of student teacher supervision in teacher education, and in an effort to bring a solution to the problems involved in it the authors of Chapter 6 exemplify an implementation of video conferencing via MLTs for student teaching observation in special education. Giving a detailed account of this video supervision, they make some very valuable suggestions on authorization procedures, accounting for technological limitations, and conducting remote observation.

They further discuss some concerns regarding the security of video conferencing and protecting student confidentiality, pointing out that these issues can be resolved by using secure software and appropriate procedures. All considered, MLTs offer great benefits to save costs and time, relieving faculty in teacher education programs from a great burden.

Chapter 7:
Mobile Technology in Higher Education
by Josh Harrower & Cathi Draper Rodríguez
This chapter examines the replication and transferability patterns related to the use of a mobile technology device across multiple instructors, settings, context, and content areas in higher education settings. The authors describe their six-year long replication study in detail.

First, they discuss expected adaptation in terms of fidelity of use, and then go on to elaborate on the background, implementation, and implications of their study, with student/instructor prior use of and familiarity with mobile technology as the major variables.

They found that MLT was successful in supporting higher education STEM learning. Implementation level, instructor familiarity, and student background knowledge colored participant perceptions of MLT-related learning outcomes. Based on this study, the authors strongly recommend that before introducing a new technological device in a higher education classroom, instructors should select the ones with documented suggested uses, repeat it at least twice, and give time for adaptation.

Chapter 8:
Improving the Work Integrated
Learning Experience through Mobile Technologies
by Meghan Morris Deyoe, Dianna L. Newman & Jessica M. Lamendola
The authors of Chapter 8 present some challenges encountered in relating teaching theory to workplace practice in a teacher education program, involving the use of Work Integrated Learning (WIL), and how they have tackled these challenges proactively and in a systematic way. The authors begin by introducing the paradox of 19th century working views defining 21st century practicum, and underscore the importance of real-time feedback in filling knowledge gap. Then, they dwell on assessing students real-time through both summative and formative assessment tools and touch upon the concept of knowledge-in-practice. Next, describing their case study and presenting the details of how they implemented a trial, they list some points of incidental learning from this trial. As an overarching resolution to the potential major problems in the WIL process, they propose higher level of collaboration between universities and school sites.

Chapter 9:
Opportunities and Challenges of Mobile Technologies
in Higher Education Pedagogy in Africa
by Frederick Kang'ethe Iraki
The author of Chapter 9, Iraki describes a study on the use of mobile phones in Kenyan higher education context. Predicating his study on the problem of inadequate utilization of mobile phones for educational purposes, Iraki explores the learning benefits to be gained from MLTs, conducting a study in a French literature class that required students to use their phones to send SMS messages to the teacher. He found that using mobile phones for learning increased student autonomy and promoted self-directed learning, and allowed self-paced learning and developed problem-solving skills as well. Cultural specificities (e.g. individual vs collective) and cultural bottlenecks emerged as very significant factors to be taken into account for effective implementation.

The author highlights the need for better cooperation and increased partnership between private mobile phone companies and public institutions.

Chapter 10:
Promoting Strategic Reading Using the iBooks Author Application
by Natalia Auer

In Chapter 10, Auer focuses on digital reading in foreign language learning with tablets. Reviewing the relevant literature on digital reading and effective reading strategies, she then outlines a research project conducted in Denmark by using the iBooks Author app. The project aimed to find out how students used reading strategies when they used the tablets and which functions of the tablet helped their comprehension. She found that students indeed used a wide range of cognitive and metacognitive reading strategies reading with tablets. Using Oxford's (2011) S^2R learning strategy framework, she exemplifies and elaborates on how to embed reading strategies in digital materials. She further cautions against generalizing findings from different digital texts/formats (e.g. PDF) because each offers different features to support reading.

Chapter 11:
Using Mobile Technologies to
Co-Construct TPACK in Teacher Education
by Cornelis de Groot, Jay Fogleman & Diane Kern

Similar to Chapter 5, this chapter presents inquiries into how to benefit from MLTs (specifically iPads) to support preservice teachers' learning during their practicum, taking Mishra & Koehler's (2006) TPACK framework and design-based approach as the conceptual/practical guidelines. Two key themes, immediacy and eroded classroom isolation, have emerged, underscoring the increasing need for on-the-spot interaction and real-time communication with faculty and peers. As a result, co-learning by preservice teachers and teacher educators of many different TPACK domains of knowledge is encouraged, and suggestions to improve supportive learning environments for such co-learning that takes into account the 21st century learning needs are also made.

Chapter 12:
Reconceptualizing Learning Designs in Higher Education
by Nathaniel Ostashewski, Sonia Dickinson-Delaporte & Romana Martin

Based on an ongoing case study in the context of a post-graduate marketing course, Chapter 12 lays out a roadmap for transforming traditional classroom activities into engaging digital learning activities with iPad. The authors overview the rationale and design considerations, describe the adaptations they have had to make, and outline the outcomes and improvements they have obtained so far in their implementation project. Their clear blow-by-blow description of the activity development process is quite helpful and provides a useful exemplary model for further practical considerations. They have found that iPad activities facilitate higher levels of student engagement and achievement of learning outcomes, and enable more authentic and transferrable learning to occur.

Chapter 13:
Framing Mobile Learning
by Kim A. Hosler

In Chapter 13, Hosler introduces us to Koole's (2009) FRAME model and elucidates on how it can be used as a scaffold to promote inquiry-based, constructivist and authentic learning that makes use of MLTs.

She exemplifies the use of the FRAME model by presenting in detail an inquiry-based instructional unit implementation with MLT devices. After reviewing the literature, she first explicates the concepts of constructivist environment and inquiry-based learning. Then she gives the details of how she implemented the FRAME model, where Table 1 on pages 247-248 is particularly helpful in that it shows the specific aspects to consider. In a nutshell, she argues that the tenets of inquiry-based learning mesh well with the key capabilities of mobile learning, and when these are informed by the proper application of FRAME, situated learning activities can be rendered more constructively effective.

Chapter 14:
Integrating Mobile Technologies
in Multicultural Multilingual Multimedia Projects
by Melda N. Yildiz & Kristine Scharaldi

Like Chapter 5 and 11, focusing on teacher education, in this Chapter, Yildiz and Scharaldi explore MLT integration into professional teacher development curriculum in the light of their study on the impact of MLTs on developing multicultural/multilingual curriculum that promotes inclusive/differentiated instruction, commitment to community service, and alternative views of global education. Describing the implementation process of their "9M Model," the authors explain how they used various MLTs such as laptops, cell phones and GPS devices in their teacher education classes. They further outline some of the best practices, assessment tools and curriculum models that promote transdisciplinary teaching, introduce some innovative uses of MLTs in developing multicultural multimedia projects, and demonstrate MLT strategies to engage preservice and in-service teachers in project-based globally connected activities by providing many sample activities using plenty of Apps.

Chapter 15:
Web 2.0 Technology Use by Students in Higher Education
by Rhoda K. Gitonga, Catherine G. Murungi

Like Chapter 9, which exemplified MLT use in the context of Kenya, in this chapter Gitonga and Murungi also report their study on the use of MLTs (Web 2.0 technologies) in Kenya tertiary institutions. Similar to the local problem mentioned by Iraki in Chapter 9, they also observe the underutilization of such technologies in African countries and they set out to ascertain the current status of MLT use, their results confirming this observation.

Although the majority of students were aware of the available Web 2.0 technologies, they did not adopt them for their learning. The authors discuss the implications of their study and make recommendations for higher education in the light of the relevant literature.

CONCLUDING THOUGHTS

The dizzying progress in mobile technologies and their ready adoption for everyday uses have made their instructional integration inevitable, as the world is moving towards increasing connectedness, networking and continuous participation in all types of online platforms.

As succinctly put by Pachler et al. (2010) in their book titled Mobile Learning, the increasingly "participatory culture" today drives the instructional use of MLT tools in a more diversified and larger extent for enhanced learner participation.

MLTs provide numerous opportunities for learners. By bringing together important research on MLTs from the multiple perspectives of preservice teacher learning, course design/redesign, from various geographical contexts (Africa, America, Europe, Australia, etc.) and educational levels including considerations of access in resource-poor environments, and introducing new and creative applications of MLTs, this book makes a remarkable contribution to the field by filling a gap.

This book is also a great guide for practitioners since it provides many real-time hands-on implementations of various frameworks and models with plenty of visuals and figures. It also enlightens us about the future potential of MLTs to pave the way for educational alternatives to enhance distance learning, especially in higher education. As such, this book serves as an invaluable reference for those who seek to gain deeper insights into the current and future MLT work and for those who wish to get a glimpse into the future of MLTs.

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Currently the PA/Translator to the Rector of Anadolu University (AU), Harun Serpil, is a PhD candidate in the field of Curriculum & Instruction at the University of Wisconsin-Madison. He has twenty years of language teaching and assessment experience at collegiate level, and recently has focused more intensively on academic text translation, on pedagogical texts in particular. Among his research interests are mobile learning, multicultural education, learner diversity, critical race theory, critical discourse analysis, deep education, social reproduction, curriculum theory, and social justice.

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[i] **What Bates means here is "new media" with it sup to date meaning.**

[ii] **This study is limited to the analysis and implementations of productions of TRT Okul which started on 31 January, 2011 and continued till July 2014.**

[iii] **The programs of Anadolu University, Open Education were last broadcasted on TRT in 2007-2008 education s and then the broadcast of new programs was delayed till 31 January, 2011 when further agreement was signed. The reason for that is the 21sth article of "Law on Radio and Television High Council" numbered 2954 which suggests that open education broadcast and such educational programs are broadcasted on the approved TV channels reserved to the use of Turkish Radio and Television High Council. Pay and broadcast related issues are determined based on an agreement signed between TRT and institutional player.**

[iv] **For further detail regarding the analysis of Open and Distance Education 2020 vision, mission and main objective, see Kücükcan, Ufuk. A New TV Practice in Distance Education in Turkey. *Turkish Online Journal of Distance Education-TOJDE* April 2011 ISSN 1302-6488 Volume: 12 Number: 2 Article 10**

[v] **Participant Institutions: Anadolu University, TRT, Ministry of National Education EGITEK, University of California Media Center, BBC & Open University of UK, Discovery Channel, Teachers TV, Athabaska University Educational Television, Queensland University of Technology, Greek Educational Radio Television, Ministry of Education of Austria, Medien LB, NHK Educational, Open University Japan, Talal Abu Ghazaleh Business University, Turkish American TV, Worldwide Education, Cambridge University of Press, FiLMA CASS, IPSOS KMG.**