

Preface

Mobile computing, ubiquitous computing, and pervasive computing are now synonymous for many, and represent a new model of computing in which computation is everywhere and computer functions are integrated into everything. Everyday objects will be placed for sensing, input, processing along with user output. In practice, this means the mobile, ubiquitous, and pervasive availability of many computing devices that are carried or embedded in homes, cars, offices, in walls and tables, or worn as part of smart clothing!

This book offers a glance into recent application of such computing paradigms in the field of education as a way for providing mobile, ubiquitous, and pervasive teaching–learning facilities for everybody, everywhere, and in any way. Thus, this book embraces several chapters that make up a sample of the work currently achieved in countries from four continents, which illustrates a sample of state of the art for the mobile, ubiquitous, and pervasive learning (MUP-Learning) arena. According to the nature of the contributions accepted for this volume, four kinds of topics are identified as follows:

- *Study* reports a research topic and the way it is tackled by the approach, where the MUP-Learning topic could be the target of research or just an instrument or scenery where the work is carried out.
- *Conceptual* describes a specific viewpoint that pursues to guide the design and development of an MUP-Learning approach by means of a model, method, or framework.
- *Review* provides a profile of a sample of works as well as some statistical analyses that shape a conceptual view of the labor recently carried out in the MUP-Learning field and its tendencies.
- *Approach* focuses on the application of a specific concept (e.g., technology, paradigm, tool, method...) to a learning setting where a complete research and development cycle is achieved since the research setting up to the experimental results.

This volume is the outcome of the research recently fulfilled by authors, who are willing to promote their models, methodologies, results, and findings to the community of practitioners, pedagogues, psychologists, computer scientists, academics, and students interested in the valuable topic of MUP-Learning!

As a result of the accomplishment of the cycle that embraces chapter submission, evaluation, decision, notification, and tuning according to the Springer quality principles, eight works were approved, edited as chapters, and organized according to the following sequence:

1. Chapter “[The Effect of Question Styles and Methods in Quizzes Using Mobile Devices](#)” is a study that evaluates the impact of question styles and methods. Thus, a battery of studies is reported to analyze differences between both smartphones and tablets, diverse question styles, series of questions and answers. One result reveals higher percentage of correct answers is achieved by tablet users than smartphones.
2. Chapter “[A Generalized Approach for Context-Aware Adaptation in Mobile E-Learning Settings](#)” is a conceptual work where a framework to build adaptive mobile learning applications is described. It claims the need to identify key contextual information to enable the design of a broad diversity of educational systems.
3. Chapter “[A Revision of the Literature Concerned with Mobile, Ubiquitous, and Pervasive Learning: A Survey](#)” offers a review of recent works carried out in the MUP-Learning field in order to shape a state of the art composed of empirical, conceptual, and domain-oriented approaches, as well as identify trends and challenges to tackle.
4. Chapter “[Using Augmented Reality to Support Children’s Situational Interest and Science Learning During Context-Sensitive Informal Mobile Learning](#)” corresponds to an approach aimed at using augmented reality to stimulate children situational interest in science during context-sensitive informal learning. A case study is explored where children learn about trees by means of using iPads and augmented reality stimulates situational interest.
5. Chapter “[Cooperative Face-to-Face Learning with Connected Mobile Devices: The Future of Classroom Learning?](#)” is an approach to enhance cooperative face-to-face learning by playing a learning game for iPhone/iPad devices. The results reveal the usefulness of the application and how it motivates children to learn math.
6. Chapter “[Prospective Teachers—Are They Already Mobile?](#)” is a study to explore how teachers are willing to use mobile phones and laptops in the classroom. Thus, a cross-sectional survey is performed among 650 prospective Turkish teachers. One conclusion claims the need to motivate teachers to become aware of the mobile learning potential to enhance class.
7. Chapter “[Flexible and Contextualized Cloud Applications for Mobile Learning Scenarios](#)” represents a conceptual work aimed at providing a series of guidelines to encourage the development of mobile sceneries in cloud computing

- environments. So, a framework for teachers interested in building mobile learning systems, and a service to deploy personalized environments are stated.
8. Chapter “[Toward an Adaptive and Adaptable Architecture to Support Ubiquitous Learning Activities](#)” offers a review of the notion of adaptive and adaptable architecture suitable to develop ubiquitous learning systems. As result, a model of a domain-specific architecture is designed as a baseline for building applications.

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