# BOOK REVIEW

RESEARCH ON E-LEARNING AND ICT IN EDUCATION
Edited by Charalampos KARAGIANNIDIS, Panagiotis POLITIS, Ilias KARASAVVIDIS

Instructor Harun BOZNA
School of Foreign Languages
Anadolu University, Eskisehir, Turkey

ISBN	**978-1-4614-1082-9 (Hard cover)** **978-1-4939-4088-2 (Soft cover)**
Publication Date	**2014**
Publication Formats	**Hardcover and e-Book (PDF/ePub)**
Publisher	**Springer**
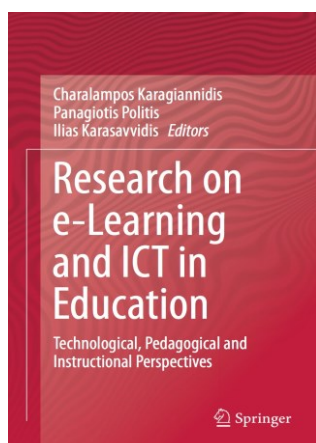
Information and Communication Technologies (ICT) have had a substantial impact on current society. The way we communicate, work and entertain has changed deeply. Education is one of the fields where ICT applications have been used expansively over the years. Educators have recognized the importance of digital materials since the early days of computers and believed that these materials can be easily managed and distributed to learners to improve the quality of education via multimedia, hyper media and interactivity.

The advent of the Internet and the web has given the opportunity to educators to distribute the digital learning materials and support new forms of web-based learning. Accordingly, the development of e-Learning systems, which support sharing of digital learning material and facilitating communication between learners and educators, has become a vital issue in education platforms.

At the same time, lifelong learning emerged as a vital necessity since all citizens need to be educated throughout their lives in order to remain competitive in the knowledge-based economy. To meet these needs of supporting access to education and training to anyone, anytime, anyplace, the e-Learning industry has experienced rapid growth over the past decade becoming the second largest industry evolving around the Internet and the web (second to e-Health industry). In this context, ICT in Education and e-Learning have become a spirited research interest worldwide during the past decades.

This volume entitled "Research on e-Learning and ICT in Education" aims to contribute to the literature in ICT in Education and e-Learning by addressing several core issues. The Volume includes 19 chapters, which cover a wide variety of topics.

Part I: Situating ICT in Education
The first part includes three chapters; ICT is scrutinized in a broader educational context. Underwood questions why digital technology has penetrated our lives so much, but has failed to make an impact in the classroom. Mikropoulos, Sampson, Nikopoulos, and

Pintelas investigate the evolution of educational technology through a bibliometric study. They analyze the 849 papers presented in a specific series of educational technology conferences (HCICTE from 2000 to 2012) in order to study the e-Learning scientific community in Greece and to identify the evolution of salient topics, and the emergence of the trends in the field. Apostolopoulou, Panagiotakopoulos, and Karatrantou conclude this part through an investigation of the learning theories underlying the development of educational applications for supporting teaching and learning of Mathematics, Physics, and Chemistry in Secondary Education.

Part II: ICT in Preschool and Primary Education

The second part includes three chapters, which examines ICT use in preschool and primary school settings. Nikolopoulou investigates how educational software is used in kindergartens. Her analysis reveals that various educational software is used in these classes, most of which are open-ended software aiming to advance language, reading, and writing skills. Findings show that the main difficulties that children face with the use of this software are related to the required motor skills and the language readiness necessary for their operation. Zaranis examines how ICT can facilitate first graders' Geometry concepts employing the Realistic Mathematics Education (RME) and the van Hiele models, and associates them with "traditional" teaching methodology. Halki and Politis investigate how educational software affects the learning outcomes of primary school students in high-level skills of critical thinking and programming.

Part III: ICT and Teaching Programming

The third part includes two chapters, which address the teaching of programming concepts through ICT. Malliarakis, Satratzemi, and Xinogalos investigate teaching of programming through educational games. They review the most recognized educational games critically for teaching programming, which can guide the development of future applications. Misirli and Komis also focus on programming through robotics in the context of early childhood education. They form a framework with educational scenarios that integrate programmable toys as a guide to teaching programming concepts. Their framework includes seven phases for designing educational scenarios, including identification of the teaching subject, identification of children's prior knowledge, determination of scenario goals, selection of ICT teaching materials and etc. Their framework has been tested and verified by 46 educators on 864 children between the ages of 4–6.

Part IV: Web 2.0 Tools and Learning

The fourth part includes three chapters, which explore how Web 2.0 technologies can affect education and describe the advancement of a Community of Inquiry (CoI) in a blended learning environment developed through hybrid learning. They analyze the social, cognitive, and teaching presence within a CoI in a specific class, where students use a blog to achieve specific learning objectives. Eteokleous-Grigoriou and Photiou investigate how blogs can be integrated in primary education. Altanopoulou, Katsanos, and Tselios investigate the effectiveness of a framed wiki-based learning activity. They report a study with 139 first year undergraduates who used Wikis to learn about Web 2.0 and its applications in the context of an introductory course. It was found that students benefited from the implementation irrespective of their role in the Wiki project. Kazanidis, Valsamidis, Kontogiannis, and Karakos address the evaluation of courseware at the exams, usage, and content level.

Part V: ICT for Learning in Museums

The fifth part includes two chapters, which explore technology-based learning in museums and cultural institutions. Yiannoutsou and Avouris recommend the use of digital games as a means to actively involve museum visitors to participate in the process of culture creation. Nikonanou and Bounia discuss digital applications created by museums and other cultural institutions. They present a qualitative evaluation study of digital applications created by Greek museums and other cultural institutions during the past few years. The study is based on contemporary theoretical approaches in the field of museum education and aims to explore the extent to which these approaches are taken into account when designing a digital application for museum education use.

Part VI: ICT and Pre- and In-service Teacher Practices

The sixth part includes three chapters, which investigate how ICT affects Pre- and In-service teachers and their practices. Karasavvidis and Kollias examine the ways in-service teachers integrate technology in their designs after an extensive Professional Development Training program. They surveyed how teachers' backgrounds influence their responses to an extensive PDT program. Conducting two studies, their results show serious doubts on the contemporary PDT programs to transform teaching practices through technology and discuss the implications of their work for future conceptualizations of PDT.

Khaneboubi and Beaune investigate the effect of ICT in French middle schools involved in a national endowment program on digital textbooks. In the study, there were 89 teachers as participants and the two datasets were collected in 2010 and 2012. The research provides useful insights into the school dynamics in this context. Vekiri examines the challenges and needs that should be addressed in teacher preparation for educational technology. She conducted a study, which analyzed 30 pre- service elementary school teachers' lesson plans, representing their first endeavors to design a web-based lesson. The analysis primarily focused on the types of activities, the characteristics of the web resources, and the scaffolding techniques planned to use to support their students. Study findings show that using the Internet productively and creatively is essential and teachers need to develop multifaceted forms of knowledge that require the integration of knowledge about technology, pedagogy, and content.

Part VII: ICT for Specialized Uses

The seventh part includes three chapters, which highlights specialized topics in ICT in Education. Tegos, Karakostas, and Demetriadis address conversational pedagogical agents in individual and collaborative learning settings. They present the results of an experimental collaborative learning activity exploring whether the different agent roles might affect the students' insights of the agent or their conversational style in their responses to it. Apostolidis and Tsiatsos present a prototype device called "Galvanic Skin Response" which measures the anxiety level of a person by collecting bio-signals. They pilot-tested their device with 13 volunteer students. Chatzara, Karagiannidis, Mavropoulou, and Stamatis examine the potential value of using Digital Storytelling for teaching social skills to children with Autism Spectrum Disorders. They used DiSSA (Digital Structured Storytelling for Autism) tool, a software application to create digital stories with a structured approach. The system is designed to supply the needs of students in the autistic spectrum, exploiting structured teaching in the design of the application.

BIODATA and CONTACT ADRESSES of AUTHOR

Harun BOZNA is an English language instructor in the Department of Foreign Languages, Anadolu University, Turkey. He received his Bachelor's degree from 19 Mayıs University, English Language Teaching Department. Currently, he is an MA student in the Department of Distance Education, Anadolu University. His research interests are instructional design, innovations in e-learning, technology adaptations in education, creative drama and applied linguistics.

Harun BOZNA
Anadolu University
School of Foreign Languages
Eskisehir, Turkey
Phone: +90 (222) 3350580-6187
E-Mail: hbozna@anadolu.edu.tr

REFERENCES

Karagiannidis, C., Politis, P., & Karasavvidis, I. (2014). *Research on e-Learning and ICT in Education*. Berlin, Germany: Springer.