Preface

On January 17, 2018 the European Commission adopted a Digital Education Action Plan, including 11 initiatives to support technology-use and digital competence development in education.

Higher education institutions, programs and policies in Europe and around the world experienced important changes in the last years to adapt to the new labor market demands. In addition, the evolution of information technologies, mobile devices, and social media as well as the needs of students, workers, and academics has experienced rapid changes too. This new reality requires innovative forms of delivery of learning content to students, the building of special learning environments, and new teaching methodologies for academics to foster the long life learning process of the student.

The European Commission has funded a number of successful R&D projects focused on information and communication technologies. The financial contribution is EUR 11.2 billion between 2007 and 2016 (European Commission, 2014, 2018). Additionally, several EU countries (e.g., Denmark, The Netherlands, and UK) have supported the used of mobile learning in schools and universities.

This book *Opening Up Education for Inclusivity Across Digital Economies and Societies* aims to foster international exchange of academic insights and approaches and broaden the visibility in the development of technology for education, establish an international platform for interactions on information technology and application in education, accelerate innovation in education technology, and analyze the latest achievements and progress in new and emerging information technology for education, with special focus on higher education institutions. A higher education is widely considered essential to social advancement. Higher education is important because students study and equip advanced technical skills to contribute the society.

The book explores initiatives, policies and cases to support technology-use and digital competence development in education systems around the world. It discusses experiences and challenges at all levels, from academic staff and administrators, to researchers and designers; from institutions to open, distance and lifelong learning. It also addresses the topic from the micro of specific applications or instances of use in classrooms to macro concerns of national policies and also regional policies, like in the European Union. The subject area is a combination of highly relevant topics: education institutions (with special focus on universities), information systems and technologies for inclusive education and societies.

The book will help universities, education institutions and countries meet challenges and opportunities of the digital era. Furthermore, this book will show the capacity of educational models and policies, information technology and management for the mutual understanding, prosperity, creation of inclusive societies and wellbeing of all the citizens in the world.

The book presents a collection of 14 chapters that cover a wide range of key topics for institutions, academics and policy makers interested in supporting inclusive education and societies and exploit the potential of new technologies to create a more inclusive society for all.

Chapter 1 titled "Lecturers' Perceptions of Learning Management Systems Within a Previously Disadvantaged University" by Suzanne Sackstein, Tsakani Violet Ndobe, and Emma Coleman argues about the integration of Learning Management Systems into an educational context can prepare students to cope with the current information society, as well as enhance pedagogical practices and knowledge transmission. In order to realise these potential benefits, it is important to understand lecturers' reasons for use and non-use of LMS. This chapter argues that when introducing digital technologies into education in developing economies, contextual issues need to be taken into account, as users have to grapple with issues that may prevent use such as low technical literacy, poor technical support, and limited internet access. For education to be truly inclusive in developing economies, these contextual issues need to be addressed so that students from such contexts are able to reap the same benefits of technology as their contemporaries worldwide, such as improved education in terms of content, and improving the future potential of students in the workplace, with its ever increasing reliance on technical skills and global connection to the digital economy.

Chapter 2 titled "Cloud Learning Management System in Higher Education" by Chin Kang Chen and Mohammad Nabil Almunawar studies the growth of cloud-based Learning Management System (LMS) in higher education. This will look at the benefits of LMS adoption and how it has grown in higher education institutions. The utilization of Information and Communication Technology (ICT) has permeated in almost every aspect of life. This chapter will cover a brief introduction about cloud-based LMS, roles of LMS in Education, Drivers for adoption and advantages of cloud-based LMS, factors to consider in the adoption of cloud-based LMS, the need for LMS and end with conclusion and future directions of cloud-based LMS.

Chapter 3 titled "Learning Analytics: Challenges and Opportunities of Using Data Analysis in Education" by Libor Juhaňák and Jiří Zounek studies a relatively new research field, known as learning analytics, which focuses on use of a wide spectrum of analytical methods and techniques to analyze data coming from educational contexts. The first part of the chapter focuses on the historical context of analytics in education and introduces several research fields that participated in the creation and formation of learning analytics. At the same time, the development of learning analytics and basic related concepts are described in more detail. In the second part, the authors provide an overview of the main research fields and topics within learning analytics, including an overview of commonly used analytical instruments and systems. The final part of the chapter then focuses on challenges currently faced by the field of learning analytics, as well as on opportunities for further development and research within learning analytics in the upcoming years, which are now under development.

Chapter 4 titled "Advantages and Challenges of Using OERs in Teaching Less Commonly Taught Languages" by Nives Mikelic Preradovic and Kristina Posavec discusses the extent and modality of corpora use in teaching less commonly taught languages, based on the teachers' experience with their foreign language students, their use of corpora and corpus tools to prepare teaching materials and based on their use of the corpora in the direct teaching process. The advantages and challenges of using OERs in teaching less commonly taught languages across different language learning levels discussed in this chapter are the result of detailed analysis of the preferences and needs of teachers at Croaticum (Centre for Croatian as a second and foreign language - CFL at the University of Zagreb), which is considered

the largest and central institution for teaching CFL. The results are also based on the analysis of existing Croatian language corpora and the literature about these corpora.

Chapter 5 titled "Investigating Asynchronous Interaction Between MOOC Learners Through Forum Use and Peer Review" by Alexandros Chavdoulas, Maria Pavlis Korres, and Piera Leftheriotou states that designers, developers and educators in an online course, where the risk of learners feeling isolated is of greater concern, should consider including learning activities that engage students with content and with each other in order to promote multiple ways of interaction and communication between learners and higher learners' engagement in the course. Interaction could be developed both in synchronous and asynchronous mode, in a direct or/and indirect (vicarious) way within the e-learning process. This chapter focuses on the development of asynchronous interaction between learners in a MOOC on personal development, provided in 2016 via a popular educational platform and how interaction affected the learning outcomes. The ways that learners asynchronously interact with each other through forum and peer- review are identified and research proved that learners interact in a direct and indirect way and that the development of interaction returns multiple benefits to the learning process and outcome.

Danielle McKain in Chapter 6 titled "Independent E-Learning: Khan Academy, Motivation, and Gamification" proposes that recent advances in technology provide the opportunity for independent eLearning virtually anytime and anywhere. Although technology offers options that can meet the needs of most learners, distractions and motivation to learn are concerns. This chapter will provide a brief history of independent eLearning and Khan Academy, as well as, research on motivation to learn and gamification. In addition, Khan Academy case studies and other independent learning resources will be discussed along with advantages and disadvantages of use. The increase in free eLearning resources that are available for classroom and personal use is changing the world of education and learning. Future research recommendations are also presented.

Chapter 7 titled "A Systematic Exploration of Language Learning Technologies: Insights for Developers and Educators" by Todd Sloan Cherner, Diming Wu, and Alex G. Fegely states that there is an ever-growing number of language learning technologies designed for teaching English, and they commonly take the form of applications for mobile devices and websites. Because learning a language provides personal and professional opportunities, this study's researchers conducted a case study that examined the functionality and quality of websites designed to teach English using Puentadura's Substitution, Augmentation, Modification, and Redefinition (SAMR) scale. This case study opens with an overview of the edtech marketplace before explaining how the researchers used SAMR to analyze websites designed for teaching English. The researchers found that the majority of websites functioned at SAMR's lower levels and that their design presented challenges when navigating through their content. This chapter concludes with multiple recommendations for both developers and researchers regarding ways to increase the websites' functionalities and improve their design.

Chapter 8 titled "Digital Entrepreneurship Education in Emerging Countries: Opportunities and Challenges" by Anggraeni Permatasari and Grisna Anggadwita proposes that entrepreneurship is one of the economic engines in a country especially in emerging countries. Entrepreneurship education is one of the knowledge transfer processes in creating entrepreneurs. The digital transformation in entrepreneurship education is a new approach and an important challenge in education to prepare students in the face of technological change. Currently, building a technology-based entrepreneurship education curriculum is critical, whereby the digitalization process can expand student partnerships and networks with their peers across countries, entrepreneurial educators, and the business communities. In particular, students will use digital tools to learn entrepreneurial skills such as business feasibility and market research as

well as designing their own business plans. This chapter provides useful information on entrepreneurship education by focusing on technological developments in Indonesia. This chapter will also explore more deeply about the current state of entrepreneurship education, opportunities and challenges.

Chapter 9 titled "CLEP: A Model of Technology and Innovation in Higher Education" by Danielle McKain reminds us that the cost of higher education goes beyond the price of tuition. College students often also face the burden of balancing college, family, and work. Demanding schedules and obligations often lead to putting courses on hold. Additionally, college students can be overwhelmed by course demands and pre-requisite skills that are required. Time is consistently an obstacle in degree completion. Of these struggles that so many face, CLEP exams are a common solution. The College Level Examination Program allows students to essentially test out of college courses and earn college credit, saving time and money. While students must be prepared for these exams, there are convenient ways to options including MOOCs, Khan Academy, and College Board resources.

Chapter 10 titled "*Kahoot!* A Game-Based Learning Tool as an Effective Medium to Improve Students' Achievement in Rural Areas" by Dini Turipanam Alamanda, Anggadwita, Abdullah Ramdhani, Mediany Kriseka Putri, and Wati Susilawati proposes that learning strategies in the digitalization era are vastly expanding. Students are comprised of the millennials which life cannot be separated from technology and the internet. The ever-expanding technology has posed new challenge on the teaching process of millennials and one of which with growing importance is increased involvement of technology that empower a host of new learning tool. One of the most prominent open-access teaching / learning tool is *Kahoot!* This study aims to complement studies about the use of game-based methods at higher education. The survey was conducted for 1 year at a university located in a small city in Indonesia. A total of 415 students were actively involved in measuring their perceptions of games-based learning tools called *Kahoot!* Furthermore, this study also measured differences in outcomes between faculties, types of subjects, and commonly used research methods. The result shows that *Kahoot!* positively impact student's academic achievements as measured by student motivation, enjoyment, engagement and concentration.

Chapter 11 titled "Students' Formal and Informal Information Sources: From Course Materials to User-Generated Content" by Corinna Petra Raith states that based on an explorative interview study, this chapter reports on students' usage behavior concerning formal and informal information sources for academic (learning) purposes. In this regard, a variety of information sources was reported, ranging from scholarly materials to applications based on user-generated content like Wikipedia, Facebook, YouTube, blogs, forums, and question-and-answer sites. The findings showed that students' acceptance of information sources varied with an increase in the academic age: The more experienced students were, the more focused their choice of information sources was. Bachelor students utilized diverse sources, while doctoral and PhD students mainly concentrated on scholarly materials and news articles, but used Wikipedia, YouTube, and blogs as well. Regarding such informal sources, bachelor students mainly consulted these for learning purposes, while doctoral/PhD students primarily utilized them for checking up/acquiring information and their preparation work. The results are preliminary in their nature and are to be validated in further research.

Chapter 12 titled "A Photo-Narrative of the Sociolinguistic and Sociocultural Identities of a Refugee Adolescent: Through His Eyes" by Alex P. Davies argues that one's linguistic discourse is directly linked to his or her identity construction. The author conducted a qualitative study that investigated the sociolinguistic and sociocultural identities, both current and imagined, of a newly arrived adolescent of refugee status, named Yerodin, through a photo-narrative approach. Yerodin was unique in that he was eleven years old when he arrived to the United States but did not have any prior formalized schooling.

Therefore, he was illiterate in both his first language of Swahili and second language of English. This study took place during a summer school program that sought to develop Yerodin and his siblings' literacy skills before the upcoming school year. Findings illustrated Yerodin's current identity as one who appreciated his experiences in the refugee camp prior to resettlement and as an English learner. Furthermore, Yerodin realized that English, his second language, and academics were key to accessing his desired communities of identity, including aspects of American culture and friendships with "American peers."

Chapter 13 titled "Teacher Use of iPads in the Classroom of a South African Public School" by Vuyo P. C. Lupondwana and Emma Coleman affirms that when implementing technologies such as iPads in developing country educational contexts, there are different factors to consider than when implementing in the developed world. It is important to consider these to reap benefits that improve the inclusivity of education for all. The chapter examines teachers' use of iPads in the classroom of a township school in South Africa and the benefits and challenges experienced by teachers in using the devices. Qualitative data were collected through interviews with teachers. The findings of the study indicated that overall the effect of iPad use by the teachers was positive. The use of iPads resulted in the teachers having access to quality multi-media and educational apps to teach their subjects which led to learners' increased class involvement and independent learning. The study revealed that effective use of iPads requires; teachers that are adequately trained to use the iPad in relation to subject specific content, a reliable wireless connection, technical support and mitigation of learners' distractions.

Finally, the last chapter of this collection, Chapter 14 titled "Technology Readiness for Education 4.0: Barriers and Opportunities in the Digital World" by Francesco Caputo, Armando Papa, Valentina Cillo, and Manlio Del Giudice analyzes the relationships between human resources and ICTs with the aim to underline what barriers and opportunities are emerging in digital societies. As a matter of fact, the production, through the concept of Industry 4.0 is requiring advanced training of the workforce. To address these challenges, the chapter specifically provides a wide conceptual framework for describing the relationships between human resources and ICTs in the industry 4.0 framework. After this, the attention is focused on the construct of Technology Readiness as a way to clarify human resources' reaction to the introduction of new technologies and digital instruments. Finally, the proposed conceptual framework is used to trace possible guidelines for the management of educational programs.

After the summaries of the chapters included in the book, it is important to thank authors for their interest in participation in this book as well as the members of the Editorial Advisory Board and reviewers for the time and efforts they invested in choosing the best collection of chapters for this book. Thank you very much to all of you. Additionally, we cannot forget the support offered by IGI-Global staff to develop this book. Thank you!

Patricia Ordóñez de Pablos
The University of Oviedo, Spain

Miltiadis D. Lytras
Effat University, Saudi Arabia

Xi Zhang
Tianjin University, China

Kwok Tai Chui
City University of Hong Kong, Hong Kong

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