Preface

As the pace of change in our shared socio-economic environment seems to increase, the premise and promise inherent in the onset of the digital era suggest ways of dealing with the change-inflicted uncertainty besetting our societies. The digital era implies two distinct, and yet mutually reinforcing each other, ways of dealing with change and uncertainty, i.e., ceaseless knowledge discovery and continuous innovation. These two imperatives of knowledge discovery and innovation form the thrust of the discussion in this edited volume. Applying a variety of methodological approaches and research perspectives, the chapters included in this collection address specific issues pertinent to enhancing knowledge creation, knowledge discovery and boosting innovation in a sustainable manner. This edited volume recognizes that change is taking place, thus transforming the way our societies function, incl. our political and economic systems. This volume derives from the recognition that education and education-enabled innovation are the key factors that condition inclusive and sustainable socio-economic growth and development. Moreover, this volume is founded on the understanding that values and principles defining the functioning of liberal open societies are an integral part of education and education-enabled innovation. All things considered, this edited volume highlights how – if skillfully managed – education and education-enabled innovation can assist our societies in growing and developing in a sustainable, inclusive and peaceful manner.

The volume opens with a chapter that dwells on the role of education in boosting innovation in our societies. By (re)defining smart education and by introducing the concept of innovation networks, in Chapter 1, Visvizi, Lytras, and Daniela make a case for the centrality of education in boosting and exploiting the inherent in our societies potential to innovate. As the authors argue, the emergence and functioning of innovation networks is only possible if a certain set of fundamental values and principles is endorsed by the members of the society. The key role of education in instilling these values and principles in successive generations of agents is emphasized.

Taking the discussion on innovation networks as a point of departure, in Chapter 2, Danilo and Piagesi uphold the centrality of innovation for the development of our societies. They add to the argument introduced in the previous chapter by conceptualizing and exploring the complex relationship that unfolds among public research, business and governments. As they argue, rapid advancements in and diffusion of Information and Communication Technologies (ICTs) trigger dramatic changes in how our societies function. Importantly, while creating several challenges, ICTs bear several opportunities as well.

Indeed, as Badilla Quantana and Basso Aránguiz highlight in Chapter 3, efficient use of ICTs might advance teaching and learning process and hence might lead to dramatic positive transformation of the higher education system in Chile. As the authors explain, nevertheless, several obstacles and challenges exist that beset the prospect of improving the quality of education in Chile.

In Chapter 4, Spruit and Adriana uphold the notion of factors influencing the quality of education. By focusing explicitly on secondary education, they make a powerful case for employing business intelligence technologies to transforming secondary education. As the authors argue, as a result, a much more personalized student and teacher performance management environment would be created, thus enhancing the performance of teachers and students and, in turn, the efficacy of the teaching and learning process.

Brahimi et al., in Chapter 5, join the discussion on efficacy of the teaching and learning process and, overall, on boosting the performance of higher education institutions, by exploring the mechanism of accreditation. They argue, that accreditation supports innovation in both the delivery and the content of engineering education. Moreover, it offers insights into how to deal with specific challenges that contemporary higher education institutions confront.

Changing the level of analysis, Chapter 6 grapples with the question of how sophisticated ICTs' enhanced teaching and learning tools, such as Dees (Digital Electronics Education and Design Suite) may enhance undergraduate students' performance in Digital Electronics course. To prove her case, Vargas-Vera, the author, employs an impressive sample of more than 29 thousand. The sophisticated methodology behind the outcomes of the study presented in this chapter deserves particular attention.

In the following chapter, D'Avanzo et al. address the question of students' satisfaction with the EU co-funded Erasmus program. While the benefits of student mobility, seen as a mechanism of knowledge transfer, cannot be denied, the value added of this chapter consists in the methodology that the authors apply to conduct sentiment analysis of Erasmus' students.

Chapter 8 takes this discussion from the EU-wide mobility to virtual reality. Vargas-Vera explains how the development of a virtual campus named DeepThink, designed to support a postgraduate program in philosophy, brought about substantial transformation in the way of thinking about the nature of the teaching and learning process and the specific modes of delivery.

In Chapter 9, Stefanou and Kotsovolou explore the implications of the use of PowerPoint and how it redefines the role of the teacher, how it reshapes the interaction between the teacher and the student and how it forces them to adapt to different, respectively teaching and learning strategies.

In Chapter 10, Jdidou and Khaldi direct the discussion to Massive Online Open Courses (MOOCs) to argue that they role is not replace traditional modes of teaching and learning, but rather to enhance the learning process and enable students to improve their performance. To this end, however, as the Authors argue, it is necessary that students are offered assistance and personalized guidance. To this end, appropriate algorithms embedded in MOOCs might do just that.

In Chapter 11, Masud explores the challenges inherent in maintaining and updating the knowledge base upon which collaborative knowledge sharing systems are built. This highly interesting, albeit quite technical discussion, reminds us that ICTs-enhanced teaching and learning is a two-way street, which requires an equal focus on the uses of technology in education and the infrastructure that makes the use of technology feasible in the first place.

In the following three chapters, the level of analysis changes. Consequently, the conceptualization of education, especially its spatial and temporal dimensions, is extended. It is brought beyond the class room or a university setting, to entail cities and urban spaces. These, in turn, are conceived as modern *agora* where teaching and learning establish themselves a part of day-to-day interaction through which community and society is constructed and re-constructed over time. Specifically, in Chapter 12, Alides Rezende examines how ICTs' enhanced infrastructure enables citizens' access to information and knowledge about the urban space they inhabit. By exploring the cases of Chicago (USA) and Curitiba (Brazil),

Rezende makes a distinctive case for the value added of investing in ICTs' enhanced infrastructure. As the author demonstrates, this infrastructure, by facilitating access to information and services, improves citizens' well-being.

Another aspect defining the functioning of urban space seen as *agora*, is the rapid growth and evolution of this space. The challenge, thus, is how to ensure citizens' well-being given the speed of change. As Hipolito et al. demonstrate, if information about that space is skilfully collected, processed and fed-back into the policy-making process, it is possible to keep en par with the evolution of the urban space and ensure citizens' well-being. By focusing on the problem of noise pollution in urban space, in their discussion (Chapter 13), Hipolito et al. explain how user-generated content may constitute a key source of information in the process of monitoring and addressing environmental noise in cities. One of the arguments that Chapters 12 and 13 bring to the surface of the discussion on ICTs' enhanced infrastructure – seen as a means of facilitating the distribution of information and knowledge about the public space and services available to its inhabitants – is the question of how to ensure a form of active engagement of citizens with that infrastructure. In other words, if urban space is seen as an agora, the value of ICTs' enhanced infrastructure can be exploited only if that that infrastructure derives from citizens' feedback and, hence, mirrors citizens' needs. In Chapter 14, Hartman et al. grapple with the challenge of mobilizing citizens' participation by exploring the – as they argue – increasingly successful practice of 'innovation contests'.

In Chapter 16, the focus of the analysis presented in this volume narrows. By returning to MOOCs, this chapter explores the question of how to exploit the content generated in a voluntary manner by MOOCs' through their engagement with online MOOC-related communities. As Luna et al. argue, this spontaneous and voluntarily shared information bears great educational potential, which, nevertheless, only rarely is recognized and exploited. The discussion in the volume concludes with a chapter that explores the notion of internal branding seen as a function of communication and an organization's business strategy. As Matiatou outlines, communication practices are vital for companies to be able to fulfil their vision, mission, and goals. Implicitly, Matiatou's chapter reminds us that, ultimately, students already are, or are bound to become, members of organizations. In this view, knowledge discovery is a perpetual process that needs to be strengthened and enhanced. The promise of the digital era is that we can do it effectively. This edited volume attests to that.

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