

## **PREFACE**

### **Tools, Pedagogical and Ludic Strategies, Co-Design supporting Smart Learning Ecosystems and Smart Education**

It was a pleasure to co-guest edit this special issue 47 of IxD&A international journal, for two fundamental reasons. The first because it represents a contribution to keep science, namely research, going on at its best, sharing knowledge in such a harsh moment for mankind. The second reason due to the substance that is hereby shared by the articles in this special issue. This is just one more demonstration that it is possible to learn and continue sharing in a global critical social situation, created by the COVID-19 pandemic, that has recursively locked down several countries. So, it is absolutely imperative to highlight a special acknowledgment to all the authors of this special issue to have made it possible.

This issue integrates twelve articles that go from smart learning to learning ecosystems and innovation. Four of these articles report work developed during the COVID-19 pandemic and reinforce contributions and lessons learned in such an extraordinary study context. In this issue Smart Learning approaches are substantiated by very relevant empirical evidence, and highlighted by innovative technology mediated strategies, such as technology-enhanced learning or another with a gamification strategy for these purposes. The learning ecosystems that occur in some of these articles are very singular and worthwhile understanding how pluridisciplinary the application of the smartness concept can be, with situations that took place at libraries, in architectural context; university campuses; primary schools; secondary schools and higher education institutions. The contextual research diversity of this issue is inspiring and will surely enrich the reader eager to depict state of art work in innovative learning ecosystems, contextualized in COVI-19 or not,

In all its instances, smartness should always demonstrate the human-centric approach of the research process and in the form of its contributions and results. Some of the articles even show how unexpected the smartness concept can be, such as one that compares spatial organisation supported by pedestrian speed metric in the Sulaimani University, Iraq, or another that is contextualized in architectural information. Singular papers in very unique learning ecosystems that clearly demonstrate that the smartness concept can have a very broad and innovative interpretation and application..

*Óscar Mealha<sup>1</sup>, Traian Rebedea<sup>2</sup>*

<sup>1</sup> *University of Aveiro, Portugal*

<sup>2</sup> *University Politehnica of Bucharest, Romania*