PREFACE

Issue 44 is a very special issue for IxD&A journal because it is the first one of its history based only on regular papers. It could be an effect of the Covid-19 pandemic and/or a consequence of a transformation that will probably affect the scientific research in the months and years to come. In any case IxD&A, as it is in its tradition, will continue to promote the integration of special issues, focus section and regular papers and, as well, the integration of competences and perspectives with particular attention to design, mediated communication and technology enhanced education. We consider all them as the cornerstones on which is based the development of present and future people centered socio-techno ecosystems and of their, at large, architectures.

The content of this issue is perfectly in line with this cultural perspective.

The first paper by Paula Alexandra Silva et al., in fact, investigates the role of digital technologies by means of a systematic literature review. From the analysis of the selected papers it emerges that digital technologies, besides a key role in supporting community collaboration and cooperation, support also community debate and act as enablers of community empowerment and advocacy.

In the second paper we move from a territorial dimension to more personal needs and applications where human and machine concur in supporting Prosthetic Interactions. John M. Carroll et al. investigate scenarios in which internet offers the possibility to support people with visual impairment. Design, thus, is used as the key activity to explore the future.

In the third paper the design becomes the object of investigation and ilker Erkan has used brain imaging to highlight differences between architects and non-architects during the early design stage and the overall design process, also to make emerge the role of education on how the design ideas begin to take form.

With the fourth paper we move from the study of the early creative stage to the observation of educational processes based on co-design. Maka Eradze and al. argue that the latter could be very helpful in developing a Multimodal Learning Analytics approach that integrates data coming from both virtual and physical spaces and, at the same time, classroom observations and automatic collection of data to achieve a better and layered contextualization, that can be employed, for example, to better understand how digital resources are used.

A participatory approach to learning design is the focus of the fifth paper. It has been investigated through the lens of the 4Cs framework (Consuming, Creating, Connecting and Contributing). Donatella Persico et al., show that the individualistic behaviors (Consuming and Creating) are more popular than the altruistic ones (Connecting and Contributing), at least among the sample of teachers that have been involved in the research. In addition the authors put in evidence - once more if needed - the existence of a relevant gap between the academic research and the everyday practice in the schools. Of course, some actions have to be undertaken to reduce such gap in all subdomains of the technology enhanced learning, included the specific one investigated by this paper.

Co-design is also the topic of the study described in the sixth paper by Wolmet Barendregt et.al. It has been applied to the design of novel technologies with children.

The authors report on the early stage of the design and development of a robot tutee for use in mathematics education. The key points are the introduction in the co-design process of a demystifying phase and the gradual introduction to the robot's capabilities, in order to foster reasonable expectations in children and gather feasible design input. Authors discuss benefits and tensions of their approach and reflect on implications for mutual learning.
The last paper, by Agneta Gulz et al., is still focusing on math education and, as for the fourth paper, on the interplay between digital and physical spaces. The analyses revealed a great variety of ways in which children and teachers – acting on their own or together – were able to bring the digital game out to the physical room. Relevant turned out to be experiences with the game, the familiarity with narratives and with game design. The authors conclude that the extension of the virtual game in the physical space has positive influences on early math learning.

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