The **20**th edition the International Conference on Cognition and Exploratory Learning in Digital Age (CELDA 2023) was held in Madeira Island, Portugal, from 21 to 23 October 2023.

This conference was organized by the International Association for Development of the Information Society.

The CELDA conference tries to address the foremost issues of concern within the evolving learning processes and supporting pedagogies and applications in the digital age. There had been advances in both cognitive psychology and computing that have affected the educational arena. The convergence of these two disciplines is increasing at a fast pace and affecting academia and professional practice in many ways. Paradigms such as just-in-time learning, constructivism, student-centered learning and collaborative approaches have emerged and are being supported by technological advancements such as simulations, virtual reality and multi-agents systems. These developments have created both opportunities and areas of serious concerns. This event covered both technological as well as pedagogical issues related to these developments. Main topics have been identified. However innovative contributions that do not easily fit into these areas were also considered as long as they were directly related to the overall theme of the conference – cognition and exploratory learning in the digital age.

The CELDA 2023 Conference received 75 submissions from more than 24 countries. Each submission was reviewed in a double-blind review process by at least two independent reviewers to ensure quality and maintain high standards. Out of the papers submitted, 46 were accepted as full papers for an acceptance rate of 61%; 11 were accepted as short papers and 1 was accepted as reflection paper.

Authors of the best published papers in the proceedings of CELDA 2022 were invited to publish extended versions of their papers in:



- A book from Springer

In addition to the presentation of full, short and reflection papers, the conference also included one keynote presentation by Professor Barbara Wasson, Director, Centre for the Science of Learning & Technology, Norway.



Keynote Presentation:

"IMPLEMENTING LEARNING ANALYTICS IN NORWAY"

by Professor Barbara Wasson, Director, Centre for the Science of Learning & Technology, Norway

The CELDA 2023 Book of Proceedings was published in hard copy by IADIS Press.

(ISBN: 978-989-8704-52-8)

Editors: Demetrios G. Sampson, Dirk Ifenthaler and Pedro Isaías



Program Committee Members:

Conference Chair

Pedro Isaías, Universidade Aberta (Portuguese Open University), Portugal and The University of New South Wales (UNSW – Sydney), Australia

Program Co-Chairs

Demetrios G Sampson, University of Piraeus, Greece & Curtin University, Australia

Dirk Ifenthaler, University of Mannheim, Germany & Curtin University, Australia

Committee Members

Ah-choo Koo, Multimedia University, Malaysia

Anthony Y. H. Liao, Asia University, Taiwan

ChanMin Kim, Penn State University, USA

Charalampos Karagiannidis, University of Thessaly, Greece

Charoula Angeli-Valanides, University of Cyprus, Cyprus

Chien Sing Lee, Sunway University, Malaysia

Chien Ching Lee, Singapore Institute of Technology, Singapore

Chun-Wang Wei, Kaohsiung Medical University, Taiwan

David Guralnick, Kaleidoscope Learning, USA

Dirk Tempelaar, Maastricht University, Netherlands

Flavio Manganello, National Research Council, Italy

Georgios Zacharis, Aristotle University of Thessaloniki, Greece

Giuliana Guazzaroni, MI, Italy

Hui-Chun Chu, Soochow University, Taiwan

I-fang Liu, National Central University, Taiwan

Jay Loftus, Michigan State University, USA

Joyce Pittman, Global Education Technology Research & Associates, USA

Julie-Ann Sime, Lancaster University, United Kingdom

Katherine Sinitsa, Int. Res. Training Center for Info. Technologies and Systems, Ukraine

Kuo-Liang Ou, National Tsing Hua University, Taiwan

Kyparissia Papanikolaou, School of Pedagogical and Technological Education, Greece

Lence Miloseva, Goce Delcev University, Macedonia

Luis Anido, University of Vigo, Spain

Maiga Chang, Athabasca University, Canada

Michail Kalogiannakis, University of Crete, Greece

Mike Joy, University of Warwick, United Kingdom

Min Kyu Kim, Georgia State University, USA

Ming-Chi Liu, Feng Chia University, Taiwan

Ming-puu Chen, National Taiwan Normal University, Taiwan

Minjeong Kim, Dankook University, Republic of Korea

Mohammad Khalil, University of Bergen, Norway

Muhittin Sahin, University of Mannheim, Germany

Patrick Blumschein, University of Education Freiburg, Germany

Patrick Jost, Vorarlberg University of Applied Sciences, Austria

Pierpaolo Di Bitonto, Grifo Multimedia, Italy

Radu Vasiu, Politehnica University of Timisoara, Romania

Sanghoon Park, University of South Florida, USA

Sofia Papavlasopoulou, Norwegian University of Science and Technology, Norway

Stamatios Papadakis, University of Crete, Greece

Tassos Mikropoulos, The University of Ioannina, Greece

Tobias Hoelterhof, Catholic University of Applied Sciences, Germany

Veronica Rossano, University of Bari, Italy

Vincent Barre, Le Mans University, France

Yen-Ting Lin, National Pingtung University, Taiwan