



eLmL 2020

The Twelfth International Conference on Mobile, Hybrid, and On-line Learning

November 21 – 25, 2020

Valencia, Spain

eLmL 2020 Editors

Alexander Mikroyannidis, The Open University, UK

Maiga Chang, Athabasca University, Canada

Stephen White, The University of Huddersfield - Queensgate, UK

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2020) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed with permission by Curran Associates, Inc. (2020)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

Exploring Blockchain for Public Sector Recruitment <i>Konstantinos Siassiakos, Foteini Bompoti, Thanos Papaioannou, Kalliopi Stagka, Panagiotis Zarafidis, and Anna Pavli</i>	1
Blockchain Applications in Education: A Case Study in Lifelong Learning <i>Alexander Mikroyannidis</i>	4
Using Blockchain, Semantics and Data Analytics to Optimise Qualification Certification, Recruitment and Competency Management: a Landscape Review <i>Christos Kontzinos, Ourania Markaki, Panagiotis Kokkinakos, Vagelis Karakolis, Stavros Skalidakis, and John Psarras</i>	9
Decentralised Qualifications' Verification and Management for Learner Empowerment, Education Reengineering and Public Sector Transformation: The QualiChain project <i>Christos Kontzinos, Ourania Markaki, Panagiotis Kokkinakos, Vagelis Karakolis, Stavros Skalidakis, and John Psarras</i>	16
Towards A Blockchain-based Decentralised Educational Landscape <i>Niaz Chowdhury, Manoharan Ramachandran, Allan Third, Alexander Mikroyannidis, Michelle Bachler, and John Domingue</i>	21
Digital Transformation of Education Credential Processes and Life Cycles - A Structured Overview on Main Challenges and Research Questions <i>Ingo R. Keck, Maria-Esther Vidal, and Lambert Heller</i>	27
Fingers and Toes: A Hidden BioMetric Story <i>Rachel Stange</i>	31
Exploitation of Radio Frequency Technologies Through the use of Microcontrollers <i>Daniel Joachim</i>	37
Incorporating Cyber Competencies in K-12 <i>Rachel Stange</i>	42
Mobile Application for University Courses of Journalism and Research <i>Claudia A. Lerma-Noriega, Maria Leticia Flores-Palacios, and Genaro Rebolledo-Mendez</i>	47
New Learning Method for Structural Understanding in Architecture Based on Gamification <i>Perla Rafael Santa Ana Lozada and Aleksandra Krstikj</i>	51
Addressing Prerequisites for STEM Classes Using an Example of Linear Algebra for a Course in Machine Learning	57

Genady Grabarnik, Luiza Kim-Tyan, and Serge Yaskolko

DelphiCare 6.0 <i>Rene Joaquin Diaz Martinez, Rafaela Villalpando Hernandez, Yamilin Aracely Zamora Enriquez, Juan Francisco Medina Leal, and Cesar Eduardo Cuevas Garza</i>	63
Creating Free, Interactive Resources to Support Student Success: Pilot Programs and Preliminary Findings <i>Tamara Powell</i>	67
Solution for Real Problems through Research by Undergraduate Students <i>Rene Joaquin Diaz Martinez, Rafaela Villalpando Hernandez, Ramiro Saldana Acosta, Juan Francisco Medina Leal, Liliana Lizeth Luevano Rosales, and Irene Reynoso Anguiano</i>	73
Intelligent Tutoring Systems for Generation Z's Addiction <i>Ioana R. Goldbach and Felix G. Hamza-Lup</i>	77
Evaluating Virtual Reality as a Learning Resource: An Insight into User Experience, Usability and Learning Experience <i>Katherina Gallardo and Nohemi Rivera</i>	81
DEKXTROSE: An Education 4.0 Mobile Learning Approach and Object-Aware App Based on a Knowledge Nexus <i>Roy Oberhauser</i>	86
Conversational Robot for Practice Interviews in Creative Industries <i>Maria Leticia Flores-Palacios, Claudia Alicia Lerma-Noriega, and Genaro Rebolledo-Mendez</i>	92
Rethinking Self-directed Learning for Information Managers <i>Gerrit Wucherpennig, Monika Steinberg, and Anke Wittich</i>	96
Conversational Agent in Mobile Assisted Language Learning for Adult Immigrants <i>Giorgio Robino, Simone Torsani, and Fabrizio Ravicchio</i>	103