

# **14th International Conference on Cognition and Exploratory Learning in Digital Age (CELDA 2017)**

Cognition and Exploratory  
Learning in Digital Age

Vilamoura, Portugal  
18 – 20 October 2017

## **Editors:**

**Demetrios G. Sampson**  
**J. Michael Spector**

**Dirk Ifenthaler**  
**Pedro Isaias**

ISBN: 978-1-5108-5320-1

**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© (2017) by International Association for Development of the Information Society (IADIS)  
All rights reserved.

Printed by Curran Associates, Inc. (2018)

For permission requests, please contact International Association for Development of the Information Society (IADIS) at the address below.

International Association for Development of the Information Society (IADIS)  
Rua Sao Sebastiao Da Pedreira  
No. 100, 30, 1050-209  
Lisbon, Portugal

Phone: 351 21 3151373  
Fax: 351 21 3151244

[secretariat@iadis.org](mailto:secretariat@iadis.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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

FOREWORD	ix
PROGRAM COMMITTEE	xi
KEYNOTE LECTURE	xiii

## FULL PAPERS

ARE LEARNING LOGS RELATED TO PROCRASTINATION? FROM THE VIEWPOINT OF SELF-REGULATED LEARNING <i>Masanori Yamada, Misato Oi and Shin'ichi Konomi</i>	3
ASYMMETRY IN THE PERCEPTION OF FRIENDSHIP IN STUDENTS GROUPS <i>Luigi Lancieri</i>	11
EXPLORING TEACHER USE OF AN ONLINE FORUM TO DEVELOP GAME-BASED LEARNING LITERACY <i>Amanda Barany, Mamta Shah and Aroutis Foster</i>	19
EDUCATIONAL ASSESSMENT OF STUDENTS IN PRIMARY SCHOOL IN TUNISIA <i>Wiem Ben Khalifa, Dalila Souilem and Mahmoud Neji</i>	28
IMPACT OF EARLY NUMERACY TRAINING ON KINDERGARTENERS FROM MIDDLE-INCOME FAMILIES <i>Carla Meloni, Rachele Fanari, Andrea Bertucci and Sara Berretti</i>	35
360 DEGREE VIDEOS WITHIN A CLIMBING MOOC <i>Michael Gänsluckner, Martin Ebner and Isidor Kamrat</i>	43
CULTIVATING STUDENTS' READING LITERACY USING DIGITAL LEXILE-BASED READING IN A CHINESE PRIMARY SCHOOL <i>Patricia Norte, Joao Negreiros and Ana Correia</i>	51
HOW TO FLIP A CLASSROOM AND IMPROVE STUDENT LEARNING AND ENGAGEMENT: THE CASE OF PSYC1030 <i>Pedro Isaias, Blake McKimmie, Aneesha Bakharia, John Zornig and Anna Morris</i>	60
EARLY NUMERICAL COMPETENCE AND NUMBER LINE TASK PERFORMANCE IN KINDERGARTENERS <i>Rachele Fanari, Carla Meloni and Davide Massidda</i>	70
EXPLORING THE IMPACT OF THE INFORMATIONAL VALUE OF FEEDBACK CHOICES ON PERFORMANCE OUTCOMES IN AN ONLINE ASSESSMENT GAME <i>Maria Cutumisu</i>	77
REFINING PRESENTATION DOCUMENTS WITH PRESENTATION SCHEMA <i>Yuki Obara and Akihiro Kashihara</i>	85

THE KNOWLEDGE DEVELOPMENT MODEL: RESPONDING TO THE CHANGING LANDSCAPE OF LEARNING IN VIRTUAL ENVIRONMENTS <i>Nan B. Adams</i>	93
MOBILE LEARNING ANALYTICS IN HIGHER EDUCATION: USABILITY TESTING AND EVALUATION OF AN APP PROTOTYPE <i>Matthias Kuhnel, Luisa Seiler, Andrea Honal and Dirk Ifenthaler</i>	101
DIGITAL COMPETENCE MODEL OF DISTANCE LEARNING STUDENTS <i>Ketia Kellen A. da Silva and Patricia A. Behar</i>	109
HOW DISPOSITIONAL LEARNING ANALYTICS HELPS UNDERSTANDING THE WORKED-EXAMPLE PRINCIPLE <i>Dirk Tempelaar</i>	117
PUSHING BUTTONS: A SOCIOMATERIAL EXPLORATION OF THE DISTRIBUTED LECTURE <i>Anna MacLeod, Paula Cameron, Olga Kits and Cathy Fournier</i>	125
MULTIMODAL TEACHING AND LEARNING WITH THE USE OF TECHNOLOGY: MEANINGS, PRACTICES AND DISCOURSES <i>Vasiliki Papageorgiou and Petros Lameris</i>	133
CONTRASTS IN OPENNESS TOWARD MOBILE LEARNING IN THE CLASSROOM: A STUDY OF ELEMENTARY, MIDDLE AND HIGH SCHOOL TEACHERS <i>Rhonda Christensen and Gerald Knezek</i>	141
CLASSIFICATION OF LEARNING STYLES IN VIRTUAL LEARNING ENVIRONMENT USING J48 DECISION TREE <i>Renato R. Maaliw III and Melvin A. Ballera</i>	149
USING SHORT VIDEOS AS TESTING ELEMENTS IN SKILL MATCHING - TEST DESIGN IN THE SMART PROJECT <i>Marc Beutner and Frederike Anna Rüscher</i>	157
I MIGHT NOT BE AS TECH AS YOU THINK: COLLEGIATE PRINT VERSUS DIGITAL PREFERENCES <i>Joan Ann Swanson, Susan L. Renes and Anthony T. Strange</i>	165
A VISUALIZATION SYSTEM FOR PREDICTING LEARNING ACTIVITIES USING STATE TRANSITION GRAPHS <i>Fumiya Okubo, Atsushi Shimada, Yuta Taniguchi and Shin'ichi Konomi</i>	173
OCRA, A MOBILE LEARNING PROTOTYPE FOR UNDERSTANDING CHEMISTRY CONCEPTS <i>Tenku Putri Norishah Tenku Shariman and Othman Talib</i>	181
TEACHING STRATEGIES AND METHODS IN MODERN ENVIRONMENTS FOR LEARNING OF PROGRAMMING <i>Slobodanka Djenic and Jelena Mitic</i>	189
A LECTURE SUPPORTING SYSTEM BASED ON REAL-TIME LEARNING ANALYTICS <i>Atsushi Shimada and Shin'ichi Konomi</i>	197
CHARACTERISTICS OF EFFECTIVE PEDAGOGICAL STRATEGIES FOR SELF-REGULATED LEARNING IN TECHNOLOGY-ENHANCED ENVIRONMENTS: TOWARDS IMPROVING LEARNING OUTCOME <i>Ian S. McGowan</i>	205

PSEUDO-HAPTIC FEEDBACK FOR PROMOTING NARRATIVE COMPREHENSION <i>Kazuaki Umetsu and Akihiro Kashihara</i>	213
--	-----

## SHORT PAPERS

DEVELOPMENT OF A SUPPORT APPLICATION AND A TEXTBOOK FOR PRACTICING FACIAL EXPRESSION DETECTION FOR STUDENTS WITH VISUAL IMPAIRMENT <i>Hirota Saito, Akinobu Ando, Shota Itagaki, Taku Kawada, Darold Davis and Nobuyuki Nagai</i>	223
TEACHING MEDIA DESIGN BY USING SCRUM. A QUALITATIVE STUDY WITHIN A MEDIA INFORMATICS' ELECTIVE COURSE <i>Ines Herrmann, Sander Münster, Vincent Tietz and Rainer Uhlemann</i>	227
AN ARCHITECTURE TO SUPPORT WEARABLES IN EDUCATION AND WELLBEING <i>Fernando Luis-Ferreira, Andreia Artifice, Gary McManus and João Sarraipa</i>	233
DIFFERENTIATED LEARNING ENVIRONMENT – A CLASSROOM FOR QUADRATIC EQUATION, FUNCTION AND GRAPHS <i>Emre Dinç</i>	237
LEVERAGING THE AFFORDANCES OF MOBILE LEARNING FOR VOCABULARY GAINS <i>Michael Bowles</i>	241
TOWARDS A FRAMEWORK OF USING KNOWLEDGE TOOLS FOR TEACHING BY SOLVING PROBLEMS IN TECHNOLOGY-ENHANCED LEARNING ENVIRONMENT <i>Sergei Kostousov and Dmitry Kudryavtsev</i>	246
EXPLORING STUDENTS' LEARNING JOURNALS WITH WEB-BASED INTERACTIVE REPORT TOOL <i>Yuta Taniguchi, Fumiya Okubo, Atsushi Shimada and Shin'ichi Konomi</i>	251
THE FRAMEWORK OF INTERVENTION ENGINE BASED ON LEARNING ANALYTICS <i>Muhittin Şahin and Halil Yurdugül</i>	255
ON THE USE OF E-TPCK FOR SITUATED TEACHER PROFESSIONAL DEVELOPMENT <i>Maria Mama Timotheou, Andri Christodoulou and Charoula Angeli</i>	259
NARB-BASED ANALYSIS OF TWEETS RELATED TO UNITED AIRLINES CONTROVERSY: LEARNING BEYOND THE MEDIA <i>Ananda Mitra</i>	263
LEARNERS' AND TEACHERS' PERCEPTIONS OF LEARNING ANALYTICS (LA): A CASE STUDY OF SOUTHAMPTON SOLENT UNIVERSITY (SSU) <i>Osama Khan</i>	267
ISSUES OF IT-PROFESSIONALS TRAINING IN TRADITIONAL EDUCATIONAL PROCESS <i>Farid Eminov and Irina Golitsyna</i>	273

THE ISOLATION EMOTION: AN EMOTIONAL POINT OF VIEW ON TEAMING AND GROUP TOOLS IN E-LEARNING ENVIRONMENTS <i>Tarek Boutefara and Latifa Mahdaoui</i>	277
DEVELOPMENT OF CRITICAL THINKING WITH METACOGNITIVE REGULATION AND TOULMIN MODEL <i>Yasushi Gotoh</i>	281
A PRELIMINARY INVESTIGATION INTO PARENTS' CONCERNS ABOUT PROGRAMMING EDUCATION IN JAPANESE PRIMARY SCHOOLS <i>Yukiko Maruyama, Hiroko Kanoh and Kinya Adachi</i>	286
DESIGNING PHILADELPHIA LAND SCIENCE AS A GAME TO PROMOTE IDENTITY EXPLORATION <i>Amanda Barany, Mamta Shah, Jessica Cellitti, Migela Duka, Zachari Swiecki, Amanda Evenstone, Hannah Kinley, Peter Quigley, David Williamson Shaffer and Aroutis Foster</i>	291
JUXTAPOSE: AN EXPLORATION OF MOBILE AUGMENTED REALITY COLLABORATIONS AND PROFESSIONAL PRACTICES IN A CREATIVE LEARNING ENVIRONMENT <i>Darren Menorath and Laurent Antonczak</i>	297
GENDER, GAMES AND SPACE <i>Suzanne de Castell, Hector Larios and Jennifer Jensen</i>	302
THE CONTRIBUTION OF COLLECTIVE INTELLIGENCE FOR THE ANALYSIS OF THE PHENOMENON OF STUDENTS OVERCROWDING <i>Dikagma Bassagou and Luigi Lancieri</i>	307
INTEGRATED COLLABORATIVE E-LEARNING FOR THE GLOBAL MANAGEMENT EDUCATION IN THE 21ST CENTURY <i>Barbara W. K. Son</i>	311
RELATIONS BETWEEN COGNITIVE RESOURCES AND TWO TYPES OF GERMANE LOAD FOR LEARNING <i>Kazuhisa Miwa, Hitoshi Terai and Yosuke Mizuno</i>	315
A FRAMEWORK FOR PEOPLE RE-IDENTIFICATION IN MULTI-CAMERA SURVEILLANCE SYSTEMS <i>Sirine Ammar, Nizar Zaghdan and Mahmoud Neji</i>	319
CONNECTING THE DOTS: LINKING CREATIVITY, SYNTHESIS SKILLS, AND THE STUDENTS' ANXIETY ABOUT THE FUTURE <i>Ioan Susnea, Emilia Pecheanu, Luminita Dumitriu and Adina Cocu</i>	323
 <b>REFLECTION PAPERS</b>	
LOCALISING CONTENT FOR AN XMOOC IN THE UAE <i>Jenny Eppard and Preeya Reddy</i>	329
ACADEMIC READING ON A COLLABORATIVE, ONLINE PLATFORM <i>Jenny Eppard and Preeya Reddy</i>	331
 AUTHOR INDEX	