

2017 IEEE 17th International Conference on Advanced Learning Technologies (ICALT 2017)

**Timisoara, Romania
3-7 July 2017**



**IEEE Catalog Number: CFP17261-POD
ISBN: 978-1-5386-3871-2**

**Copyright © 2017 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP17261-POD
ISBN (Print-On-Demand):	978-1-5386-3871-2
ISBN (Online):	978-1-5386-3870-5
ISSN:	2161-3761

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
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

2017 IEEE 17th International Conference on Advanced Learning Technologies

ICALT 2017

Table of Contents

Preface	xviii
Chairs and Program Committee Members	xix

Track 1. Technologies for Open Learning and Education (i-OPENLearn@ICALT2017)

University Lecturer Views on Pedagogic Lurking	1
<i>Eva Dobozy</i>	
Research on Differences of University Students' Communication in IM and Practical Environments: Case Study Based on Acquaintance Group	3
<i>Xiaoling Ye</i>	
A Model to Assist Pedagogical Scenario Building Process in cMOOCs	5
<i>Aicha Bakki, Lahcen Oubahssi, Sébastien George, and Chihab Cherkaoui</i>	
Affordances of the LePlanner for Sharing Digitally Enhanced Learning Scenarios	8
<i>Kai Pata, Aleksandr Beliaev, Romil Rōbtšenkov, and Mart Laanpere</i>	
Why We Need High Drop-Out Rates in MOOCs: New Evaluation and Personalization Strategies for the Quality of Open Education	13
<i>Christian M. Stracke</i>	
Ontological Learner Profile Identification for Cold Start Problem in Micro Learning Resources Delivery	16
<i>Geng Sun, Tingru Cui, Jun Shen, Dongming Xu, Ghassan Beydoun, and Shiping Chen</i>	
Enhancing Student Digital Skills: Adopting an Ecosystemic School Analytics Approach	21
<i>Stylianios Sergis, Demetrios G. Sampson, and Michail Giannakos</i>	
Using Open Education Tools for a Higher Education Virtual Campus	26
<i>Diana Andone, Andrei Ternauciuc, and Radu Vasiiu</i>	
Facilitating the Open Learning and Education through Facial Analytics and Video Streaming	31
<i>Vincent Tam and Mimansha Gupta</i>	

Automatic Lecture Subtitle Generation and How It Helps	34
<i>Xiaoyin Che, Sheng Luo, Haojin Yang, and Christoph Meinel</i>	

Track 2. Adaptive and Personalised Technology-Enhanced Learning (APT@ICALT2017)

How Much Learning Support Should be Provided to Novices and Advanced Students?	39
<i>Xingliang Chen, Antonija Mitrovic, and Moffat Mathews</i>	
The Use of Handwriting Input in Math Tutoring Systems: An Use Case with PAT2Math	44
<i>Felipe de Moraes, Ig I. Bittencourt, Seiji Isotani, and Patricia A. Jaques</i>	
Adaptive System for Language Learning	47
<i>Leonardo Zilio and Cédric Fairon</i>	
MORS: A System for Recommending OERs in a MOOC	50
<i>Hiba Hajri, Yolaine Bourda, and Fabrice Popineau</i>	
Tracking Students' Analytical Reasoning Using Visual Scan Paths	53
<i>Asma Ben Khedher, Imène Jraidi, and Claude Frasson</i>	
Assessment and Error Identification of Answers to Mathematical Word Problems	55
<i>J. C. S. Kadupitiya, Surangika Ranathunga, and Gihan Dias</i>	
Evaluation of the SA-E System for Analysis of Students' Real-Time Feedback	60
<i>Nabeela Altrabsheh, Mihaela Cocea, Sanaz Fallahkhair, and Khaldoun Dhou</i>	
Large Scale Evaluation of Learning Flow	62
<i>Tiina Lynch and Ioana Ghergulescu</i>	
Leveraging CPTs in a Bayesian Approach to Grade Open Ended Answers	65
<i>Maria De Marsico, Andrea Sterbini, and Marco Temperini</i>	
Integrating Product Line and Learning Style Approaches to Enforce Reusability and Personalization of Learning Objects	70
<i>A. Ezzat Labib, José H. Canós, and M. Carmen Penadés</i>	
Brazilian Portuguese Cross-Cultural Adaptation and Validation of the Susceptibility to Persuasion Scale (Br-STPS)	72
<i>Simone S. Borges, Vinicius H. S. Durelli, Helena M. Reis, Ig Ibert Bittencourt, Riichiro Mizoguchi, and Seiji Isotani</i>	
Exploiting Agents and Artifacts Metamodel to Provide Abstraction of E-Learning Resources	74
<i>Biröl Ciloglugil and Mustafa Murat Inceoglu</i>	
CLOVeR: An Optimized Repository for Customizable Learning Objects	76
<i>José Wallison F. da Silva, Cidcley T. de Souza, and Maria de Fátima C. de Souza</i>	
Inclusive Learner Model for Adaptive Recommendations in Virtual Education	79
<i>Carolina Mejia, Sergio Gomez, Laura Mancera, and Sibylle Taveneau</i>	

Smart-Learning: State Machine Simulators for Developing Thinking Skills	81
<i>Shinpei Ogata, Mizue Kayama, and Kozo Okano</i>	

Track 3. Wireless, Mobile, Pervasive and Ubiquitous Technologies for Learning (WMUTE@ICALT2017)

Designing Learning Experiences in Zoos: A Location-Based Game Development Toolkit	84
<i>Terje Väljataga, Priit Tammets, Kairit Tammets, Pjotr Savitski, Kai-Mikael Jää-Aro, and Ryan Dias</i>	
Using Augmented Reality Technology for the Development of Historic Building Teaching Application: A Mackay Culture Course	87
<i>Kai-Yi Chin, Chun-Xin Hou, Ching-Sheng Wang, and Ko-Fong Lee</i>	
Towards Proximity Tracking and Sensemaking for Supporting Teamwork and Learning	89
<i>Roberto Martinez-Maldonado, Kalina Yacef, Augusto Dias Pereira dos Santos, Simon Buckingham Shum, Vanessa Echeverria, Olga C. Santos, and Mykola Pechenizkiy</i>	
Interacting with Public Displays for Informal Learning: Design Issues and First Experiences	92
<i>Karl Barth and Wolfgang Müller</i>	
RefugeeScout: Learning German Culture for a Better Integration with a Storytelling Application	95
<i>Teresa Walter, Stefanie Eichwald, Nina Klaas, Jennifer Reder, and Wolfgang Müller</i>	
An MQTT-Based Context-Aware Wearable Assessment Platform for Smart Watches	98
<i>Mohammed Al-Soh and Imran A. Zualkernan</i>	
Towards a New Ubiquitous Learning Environment Based on Blockchain Technology	101
<i>Rawia Bdiwi, Cyril de Runz, Sami Faiz, and Arab Ali Cherif</i>	
Factors that Impact Quiz Score: A Study with Participants in a Mobile Learning App	103
<i>Xuan Lam Pham, Thi Huyen Nguyen, and Gwo-Dong Chen</i>	

Track 4. Digital Game and Intelligent Toy Enhanced Learning (DIGITEL@ICALT2017)

Auditory and Spatial Assessment in Inattentive Children Using Smart Devices and Gesture Interaction	106
<i>Mauricio Loachamín-Valencia, M.-Carmen Juan, Magdalena Méndez-López, and Elena Pérez-Hernández</i>	
A 3D Serious Game for Dental Learning in Higher Education	111
<i>David Rodríguez-Andrés, M.-Carmen Juan, Ramón Mollá, and Magdalena Méndez-López</i>	

Improve Knowledge Application Capability by Script Authoring and Comic Drama Performing	116
<i>Yun-Hsuan Chang, Yu-Fang Liu, Wen-Liang Chung, Chi-Wen Huang, and Gwo-Dong Chen</i>	
Digital Gameplay Habits and Multiple Intelligences Profile of Early Adolescents Living in Rural Areas	119
<i>Veljko Aleksić and Mirjana Ivanović</i>	
Game-Based Learning Effectiveness and Motivation Study between Competitive and Cooperative Modes	123
<i>Chang-Hsin Lin, Shu-Hsien Huang, Ju-Ling Shih, Alexandra Covaci, and Gheorghita Ghinea</i>	
Multimedia Technologies to Foster Ecological Skills	128
<i>Veronica Rossano, Teresa Roselli, and Gabriella Calvano</i>	
A Smart Educational Game to Model Personality Using Learning Analytics	131
<i>Ahmed Tlili, Fathi Essalmi, Leila Jemni Ben Ayed, Mohamed Jemni, and Kinshuk</i>	
Designing a Game for Learning Math by Composing: A Finnish Primary School Case	136
<i>Samuli Laato, Teemu H. Laine, Jungryul Seo, Wooryeon Ko, and Erkki Sutinen</i>	
Design Thinking in App Inventor Game Design and Development: A Case Study	139
<i>Peng Chen and Ronghuai Huang</i>	
Video Games that Improve ‘Learning to Learn’: Focus on Action Video Game Play Elements	142
<i>Elena Novak and Janet Tassell</i>	
Teachers at the Heart of the Learning Games Design: The DISC Model	145
<i>Mathieu Vermeulen, Gaëlle Guigon, Nadine Mandran, and Jean-Marc Labat</i>	
The Evaluation Study of Gamification Approach in Malaysian History Learning via Mobile Game Application	150
<i>Wong Seng Yue and Chong Yee Ying</i>	
CoMBaT: Wearable Technology Based Training System for Novice Badminton Players	153
<i>Ashutosh Raina, T. G. Lakshmi, and Sahana Murthy</i>	
An Investigation of the Influence of Drug Addiction on Learning Behaviors in a Game-Based Learning Environment	158
<i>Tzu-Chi Yang, Meng-Chang Chen, and Yeali S. Sun</i>	
AIMED: Agile, Integrative and Open Method for Open Educational Resources Development	163
<i>Rafaela V. Rocha, Pedro H. D. Valle, José C. Maldonado, Ig I. Bittencourt, and Seiji Isotani</i>	

The Design of Questionnaire of Students' Perceived Gender and Role of Humanoid Robots in Education	168
<i>Mojibola Abioye, Maiga Chang, Shi-Jer Lou, Ru-Chu Shih, Tzu-Chien Liu, and Fuhua Lin</i>	
FingerTrips: Learning Geography through Tangible Finger Trips into 3D Augmented Maps	170
<i>George Palaigeorgiou, Anastasios Karakostas, and Keli Skenderidou</i>	
Building a Tangible Serious Game Framework for Elementary Spatial and Geometry Concepts	173
<i>Ahmad Hassan Kobeissi, Alessio Sidoti, Francesco Bellotti, Riccardo Berta, and Alessandro De Gloria</i>	
Towards Serious Game Content-Extraction for a Pedagogical Evaluation	178
<i>Afef Ghannem, Karim Sehaba, Raoudha Khcherif, and Henda Ben Ghezala</i>	

Track 5. Computer Supported Collaborative Learning (CSCL@ICALT2017)

How Collaboration in a Heterogeneous Team Impacts Invention in the Design Process of Digital Learning Objects?: The Case of the REMASCO Project to Redesign and Reinvent the Digital School Textbook through an Online and Collaborative Design Framework	180
<i>Luis Galindo</i>	
Applying Speech-to-Text Recognition and Computer-Aided Translation for Supporting Multi-lingual Communications in Cross-Cultural Learning Project	182
<i>Rustam Shadiev, Barry Lee Reynolds, Yueh-Min Huang, Narzikul Shadiev, Wei Wang, Rai Laxmisha, and Wanwisa Wannapipat</i>	
Design of Strategy for Reducing Off-Topic in Online Discussion Activities	184
<i>Sheng-Yi Wu</i>	
Is There Difference between In and Out of Classroom? Harnessing the Group Interaction of Blended Learning	186
<i>Hang Shu, Yi Wei, and Xiao-Qing Gu</i>	
The Effects of Fusing 635 Brainstorming and C-Sketch Methods on the Creativity of Industrial Design	189
<i>Chih-Chao Hsu, Tzone-I Wang, Ke-Jie Lin, and Jia-Wei Chang</i>	
Design and Trial Use of an E-Time Capsule System	194
<i>Kazuya Takemata, Takumi Nishiyama, Akiyuki Minamide, and Shintarou Wakayama</i>	
A Co-citation Network Analysis of Computer-Supported Collaborative Learning from 2006 to 2016	196
<i>Panpan Cui, Lanqin Zheng, and Xin Li</i>	
Unlocking the Power of Word2Vec for Identifying Implicit Links	199
<i>Gabriel Gutu, Mihai Dascalu, Stefan Ruseti, Traian Rebedea, and Stefan Trausan-Matu</i>	

Intelligent Group Formation in Computer Supported Collaborative Learning Scripts	201
<i>Ishari Amarasinghe, Davinia Hernández-Leo, and Anders Jonsson</i>	
A Proposal to Measure Innovation and Scaling of CSCL Projects — Extension and Application of the JRC Mapping Framework	204
<i>Andreas Harrer and Andreas Lingnau</i>	
Designing Collaborative Learning Activities with an Augmented LD Tool	207
<i>F. Pozzi, A. Ceregini, F. M. Dagnino, D. Persico, L. P. Prieto, and L. Sarti</i>	
Interactive Kanban — Blending Digital and Physical Resources for Collaborative Project Based Learning	210
<i>Ioana Maria Bacea, Aurelia Ciupe, and Serban Nicolae Meza</i>	
CollAnnotator — A Support Tool for Content Analysis According to Community of Inquiry Framework	212
<i>Gabriel Badea and Elvira Popescu</i>	

Track 6. Technology-enhanced Assessment in Formal and Informal Education (TeASSESS@ICALT2017)

Automatic Identification of Errors in Multi-step Answers to Algebra Questions	215
<i>Buddhiprabha Erabadda, Surangika Ranathunga, and Gihan Dias</i>	
MOOC as Supplementary Tutoring to Public School Students Learning	220
<i>Erica Dal Magro, Samuel Gebing, Leticia Heinzmann, Maria Eduarda Romagna, Júlia Studer, Tiago Martins Goulart, Daniel Martins Ayub, Mauricio Covolan Rosito, Júlia M. C. Silva, Hazra Imran, and Kinshuk</i>	
Competency Analytics in the Workplace through Continuous Peer Feedback	224
<i>Eddie Walsh, Mirjam Neelen, and Evangelos Kapros</i>	
The Potential of Learning Analytics in Understanding Students’ Engagement with Their Assessment Feedback	227
<i>Mireilla Bikanga Ada and Mark Stansfield</i>	
A Method for Thematic and Structural Visualization of Academic Content	230
<i>Alexander Amigud, Joan Arnedo-Moreno, Thanasis Daradoumis, and Ana-Elena Guerrero-Roldan</i>	
Authentic Assessment Between Peers in Online Courses with a Large Number of Students	235
<i>Oscar Jerez, Nelson Baloian, and Gustavo Zurita</i>	
Automatic Assessment of Student Answers for Geometric Construction Questions	238
<i>Buddhima Wijeweera, Gihan Dias, and Surangika Ranathunga</i>	
Automatic Assessment of Student Answers Consisting of Venn and Euler Diagrams	243
<i>Diunuge Buddhika Wijesinghe, Jcs Kadupitiya, Surangika Ranathunga, and Gihan Dias</i>	
Blended Assessment Concepts for Formal and Informal Engineering Education	248
<i>Roxana Moldovan, Bogdan Orza, Cosmin Porumb, and Serban Meza</i>	

Adapted E-Assessment System Based on Cloud Computing	251
<i>Fahima Hajjej, Yousra Bendaly Hlaoui, and Leila Jemni Ben Ayed</i>	
Incorporating Open Education Resources into Computer Supported Marking Tool to Enhance Formative Feedback Creation	256
<i>Hans Jeria and Jorge Villalon</i>	
Automated Personalized Assessment of Computational Thinking MOOC Assignments	261
<i>Hasan M. Jamil</i>	

Track 7. Big Data in Education and Learning Analytics (BDELA@ICALT2017)

Real-Time Visual Feedback: A Study in Coding Analytics	264
<i>Jeremie Seanosky, Isabelle Guillot, David Boulanger, Rébecca Guillot, Claudia Guillot, Vivekanandan Kumar, Shawn N. Fraser, Kinshuk, Nahla Aljojo, and Asmaa Munshi</i>	
Face-to-Face Teaching Analytics: Extracting Teaching Activities from E-Book Logs via Time-Series Analysis	267
<i>Daiki Suehiro, Yuta Taniguchi, Atsushi Shimada, and Hiroaki Ogata</i>	
Estimation of Success in Collaborative Learning Based on Multimodal Learning Analytics Features	269
<i>Daniel Spikol, Emanuele Ruffaldi, Lorenzo Landolfi, and Mutlu Cukurova</i>	
Real-Time Learning Analytics of e-Book Operation Logs for On-site Lecture Support	274
<i>Atsushi Shimada, Kousuke Mouri, and Hiroaki Ogata</i>	
An Analysis of Degree Curricula through Mining Student Records	276
<i>Vinicius Gottin, Haydée Jiménez, Anna Carolina Finamore, Marco A. Casanova, Antonio L. Furtado, and Bernardo P. Nunes</i>	
DaVID — A Model of Data Visualization for the Instructional Design	281
<i>Douglas Afonso Tenório de Menezes, Diogo Lima Florêncio, Renato Ely Domingues Silva, Isabel Dillmann Nunes, Ulrich Schiel, and Marcus Salerno de Aquino</i>	
Student Modeling in Real-Time during Self-Assessment Using Stream Mining Techniques	286
<i>Zacharoula Papamitsiou and Anastasios A. Economides</i>	
Modelling Experts Behaviour in Q&A Communities to Predict Worthy Discussions	291
<i>Thiago B. Procaci, Sean W. M. Siqueira, Bernardo Pereira Nunes, and Terhi Nurmikko-Fuller</i>	
Style Analysis for Source Code Plagiarism Detection — An Analysis of a Dataset of Student Coursework	296
<i>Olfat M. Mirza, Mike Joy, and Georgina Cosma</i>	
Revealing Hidden Impression Topics in Students' Journals Based on Nonnegative Matrix Factorization	298
<i>Yuta Taniguchi, Daiki Suehiro, Atsushi Shimada, and Hiroaki Ogata</i>	

Graduate Attribute Assessment in Computer Engineering Program at University of Ottawa	301
<i>Aneta George, Voicu Groza, and Liam Peyton</i>	
Using EGRA Data to Automatically Generate Teaching and Training Advice for Teachers in Developing Countries	303
<i>Imran A. Zualkernan</i>	
Track 8. Technology-Enhanced Science, Technology, Engineering and Math Education (TeSTEM@ICALT2017)	
A Pilot Study of Concept Mapping Mediated Inquiry Learning in an Online Environment	308
<i>Juanjuan Chen and Minhong Wang</i>	
Teaching the Notion of Speed in Kindergarten Using the Sphero SPRK Robot	311
<i>Michalis Ioannou and Tharrenos Bratitsis</i>	
Integrating GeoGebra with TPACK in Improving Pre-Service Mathematics Teachers' Professional Development	313
<i>Kaushal Kumar Bhagat, Chun-Yen Chang, and Ronghuai Huang</i>	
Scaffolding Project-Based Learning of Computer Programming in an Online Learning Environment	315
<i>Jun Peng, Minhong Wang, and Demetrios Sampson</i>	
Building a Group Formation System by Using Educational Log Data	320
<i>Chengjiu Yin and Noriko Uosaki</i>	
Scaffolding Spatial Thinking with Visualization and Embodiment: A 3D Multimedia Approach	322
<i>Yiling Hu, Jiayu Zhu, and Bian Wu</i>	
Fake or Real? Analysis of Physical Phenomena in Viral Videos as an Inquiry Learning Activity	325
<i>Sven Manske and H. Ulrich Hoppe</i>	
Managing Knowledge Diversity: Towards Automatic Semantic Group Formation	330
<i>Sven Manske and H. Ulrich Hoppe</i>	
An Analysis of Content and Policies in ICT Education in Australia	333
<i>Dorian Stoilescu</i>	
Final Frontier: An Educational Game on Solar System Concepts Acquisition for Primary Schools	335
<i>Cristina Hava Muntean, Josephine Andrews, and Gabriel-Miro Muntean</i>	
Learning with Drones: Flying Windows for Classroom Virtual Field Trips	338
<i>George Palaigeorgiou, George Malandrakis, and Christine Tzolopani</i>	
NEWTON Virtual Labs: Introduction and Teacher Perspective	343
<i>Tiina Lynch and Ioana Ghergulescu</i>	

Track 9. Technology Enhanced Language Learning (TELL@ICALT2017)

Investigating the Effect of the Flipped Classroom Using E-Learning on Language Proficiency, Learner's Autonomy, and Class Participation of English Language Learners	346
<i>Michelle Siaocing Guo</i>	
The Influence of Technology-Enhanced Environment on the Progress and Participation in ESL Learning Activities among Ukrainian Preschoolers	351
<i>Olha Dalte, Jing Leng, and Xiaoqing Gu</i>	
Listening Strategy Applications by Learners under the Context of Multimodality	354
<i>Chia-Ling Kao, Chia-Ying Liao, and Yu-Ju Lan</i>	
A Meta-analysis of Technology Application on Language Instruction	357
<i>Mei-Mei Chang</i>	
Visualizing Characters as Images: Understanding Chinese through Internet Usage	359
<i>Laxmisha Rai, Tantan Yang, Zhongtong Yue, Nongliang Sun, and Rustam Shadiev</i>	
Testing an Extensive Reading and Blogging Model Using Structural Equation Modeling	362
<i>Sy-Ying Lee</i>	
Comparing the Judgment and Accuracy of English Vocabulary Tests Relevant to Metamemory Practice	365
<i>Hong Jon-Chao and Hwang Ming-Yueh</i>	

Track 10. Motivational and Affective Aspects in Technology-enhanced Learning (MA-TEL@ICALT2017)

Self-Regulator: Preliminary Research of the Effects of Supporting Time Management on Learning Behaviors	370
<i>Masanori Yamada, Yoshiko Goda, Takeshi Matsuda, Yutaka Saito, Hiroshi Kato, and Hiroyuki Miyagawa</i>	
What Contributes to Chinese Adolescents' Academic Self-Concept? — An Analysis of Social Media Influence of Peers	373
<i>Yan Liu and Xiaoqing Gu</i>	
Emotional Data Collection Using Self-Reporting Tools in Distance Learning Courses	377
<i>Élise Lavoué, Gaëlle Molinari, and Maxence Trannois</i>	
University Teachers and Technology Mentoring — Why, How and for Whom?	379
<i>Liina Lepp, Marvi Remmik, and Margus Pedaste</i>	
An Electroencephalograph-Based Method for Judging the Difficulty of a Task Given to a Learner	384
<i>Katsuyuki Umezawa, Tomohiko Saito, Takashi Ishida, Makoto Nakazawa, and Shigeichi Hirasawa</i>	

Creation of a Facial Expression Corpus from EEG Signals for Learning Centered Emotions	387
<i>Zatarain-Cabada Ramón, Barrón-Estrada María Lucía, Leal-Hernandez Daniel, and Ríos-Félix José Mario</i>	
Building a Face Expression Recognizer and a Face Expression Database for an Intelligent Tutoring System	391
<i>Ramón Zatarain-Cabada, María Lucía Barrón-Estrada, Francisco González-Hernández, and Hector Rodriguez-Rangel</i>	
Sentiment Analysis in an Affective Intelligent Tutoring System	394
<i>María Lucía Barrón-Estrada, Ramón Zatarain-Cabada, Raúl Oramas-Bustillos, and Francisco González-Hernández</i>	
Analysis of Learner Interest, QoE and EEG-Based Affective States in Multimedia Mobile Learning	398
<i>Arghir-Nicolae Moldovan, Ioana Ghergulescu, and Cristina Hava Muntean</i>	
 Track 11. Technology Enabled Learning of Thinking Skills (TELoTS@ICALT2017)	
Digital Storytelling as a Framework for Inquiry-Based Museum Learning	403
<i>Zoi Tsiviltidou and Giasemi Vavoula</i>	
Critical Thinker: Supporting Collaborative Argumentation with Structure and Awareness	406
<i>Na Sun, Chien Wen Yuan, Mary Beth Rosson, Yu Wu, and John M. Carroll</i>	
A Digital Tool for Argumentation Construction that Assists Users in Writing Argumentative Essays	411
<i>Yu-Fang Liu, Cheng-Yu Fan, Yun-Hsuan Chang, and Gwo-Dong Chen</i>	
FATHOM: TEL Environment to Develop Divergent and Convergent Thinking Skills in Software Design	414
<i>Patil Deepti Reddy, Sridhar Iyer, and M. Sasikumar</i>	
A Vocal Assessment Approach to Measure Elementary School Students' Critical Thinking Skills	419
<i>I-Hsiu Lin, Sie Wai Chew, and Nian-Shing Chen</i>	
Learning of Micro-Macro Thinking in Analog Electronics via MIC-O-MAP TEL Environment	422
<i>Anura Kenkre and Sahana Murthy</i>	
A System for Developing Operationalization Skills through Problem Decomposition	427
<i>T. G. Lakshmi, Prajish Prasad, and Sridhar Iyer</i>	
A Help Management System to Support Peer Instruction in Remote Laboratories	430
<i>Rémi Venant, Philippe Vidal, and Julien Broisin</i>	

Track 12. Recommender and Decision Support Systems for Learning (ReSyL@ICALT2017)

- Dashboard for Monitoring Student Engagement in Mind Mapping Activities433
Rubiela Carrillo, Clément Renaud, Yannick Prié, and Élise Lavoué

Track 13. Technology Supported Education for People with Disabilities (TeDISABLE@ICALT2017)

- aTenDerAH: A Videogame to Support e-Learning Students with ADHD438
Laura Mancera, Silvia Baldiris, Ramón Fabregat, Sergio Gomez, and Carolina Mejia
- Model Playground for Autistic Children: Teaching Social Skills through Tangible Collaboration441
Thais Castro, Alberto Castro, David Lima, and Pernille Bjorn

Track 14. Artificial Intelligence and Smart Learning Environments (AISLE@ICALT2017)

- Investigation of Learning Behaviors and Their Effects to Learning Achievement Using Ubiquitous-Physics App446
Siska Wati Dewi Purba and Wu-Yuin Hwang
- A Kinect-Based Feedback System for Improving Static Balance Ability451
Wei Wang, Wenjing Wang, and Rustam Shadieff
- Manage Learning Space to Improve Learning Experience: Case Study in Beijing Normal University on Classroom Layout454
Jing Du, Xinzhu Wang, Mingyang Geng, and Ronghuai Huang
- A Voice-Based Mobile System for Generating Stallings-Type Class Observations457
Salsabeel Y. Shapsough and Imran A. Zualkernan
- Building Adaptive Tutoring Model Using Artificial Neural Networks and Reinforcement Learning460
Giuseppe Fenza, Francesco Orciuoli, and Demetrios G. Sampson
- Smart-Learning Course Transformation for an Introductory Programming Course463
Hoda Amer and Saad Harous

Track 15. Augmented Reality and Virtual Worlds in Education and Training (VWET@ICALT2017)

- ARCoins. An Augmented Reality App for Learning about Numismatics466
M.-Carmen Juan, Mauricio Loachamín-Valencia, Inmaculada Garcia-Garcia, José Manuel Melchor, and Josep Benedito
- An Empirical Study of the Use of an Augmented Reality Simulator in a Face-to-Face Physics Course469
María-Blanca Ibáñez, Antonio J. de Castro, and Carlos Delgado Kloos

EBAGG: Error-Based Assistance for Gesture Guidance in Virtual Environments	472
<i>Florian Jeanne, Yann Soullard, Ali Oker, and Indira Thouvenin</i>	
A Comparison between Oculus Rift and a Low-Cost Smartphone VR Headset: Immersive User Experience and Learning	477
<i>Nikiforos M. Papachristos, Ioannis Vrellis, and Tassos A. Mikropoulos</i>	
Maroon VR: A Room-Scale Physics Laboratory Experience	482
<i>Johanna Pirker, Isabel Lesjak, and Christian Guetl</i>	
Science Education and Augmented Reality Content: The Case of the Water Circle	485
<i>Tharrenos Bratitsis, Pinelopi Bardanika, and Michalis Ioannou</i>	
A Mobile Exploration Solution for Virtual Libraries in Higher Education	490
<i>Catalina Malinchi, Aurelia Ciupe, Serban Meza, and Bogdan Orza</i>	
Collaborative Learning about Augmented Reality from Technology and Business Perspectives	493
<i>Mark Frydenberg and Diana Andone</i>	
Zero-Programming Augmented Reality Authoring Tools for Educators: Status and Recommendations	496
<i>Silviu Vert and Diana Andone</i>	

**Track 16. Maker Spaces and 3-D Printing Based Innovations
in Learning (Make&3DPrint@ICALT2017)**

The Influence of Live Stream and On-the-Spot Teaching on Elementary School Students in Robotics Course	499
<i>Hsuan Chang, Chao-Hung Liao, and Chung-Han Yeh</i>	
A Collaborative Learning System for Sharing 3D Models: 3D Model Co-learning Space	502
<i>I-Sheng Lin, Tsai-Yen Li, Fang-Chi Liang, and Yong-Teng Lin</i>	
An Exploratory Study on the Influence of Cognitive and Affective Characteristics in Programming-Based Making Activities	507
<i>Ilias O. Pappas, Sofia Papavlasopoulou, Michail N. Giannakos, and Demetrios G. Sampson</i>	
3D Printer FABLAB for Students at POLITEHNICA University Timisoara	512
<i>Mircea Dorin Vasilescu and Ioana Ionel</i>	

Track 17. Applications of Semantic Web technologies for Learning (SW-EL@ICALT2017)

An Approach for Automatic and Dynamic Analysis of Learning Objects Repositories through Ontologies and Data Mining Techniques for Supporting Personalized Recommendation of Content in Adaptive and Intelligent Educational Systems	514
<i>Fabiano A. Dorça, Vitor C. Carvalho, Miller M. Mendes, Rafael D. Araújo, Hiran N. Ferreira, and Renan G. Cattelan</i>	
An Automatic and Dynamic Knowledge Assessment Module for Adaptive Educational Systems	517
<i>Hiran Nonato M. Ferreira, Taffarel Brant-Ribeiro, Rafael D. Araújo, Fabiano A. Dorça, and Renan G. Cattelan</i>	
SaR-WEB: A Semantic Web Tool to Support Search as Learning Practices and Cross-Language Results on the Web	522
<i>Davide Taibi, Giovanni Fulantelli, Ivana Marenzi, Wolfgang Nejdl, Richard Rogers, and Asim Ijaz</i>	
Ontology-Based Model Sustaining Competence Management within Corporates: Competence Certification in CSR	525
<i>Ornella Malandrino and Maria Rosaria Sessa</i>	
Enrichment of the Dataset of Joint Educational Entities with the Web of Data	528
<i>Carla Limongelli, Matteo Lombardi, Alessandro Marani, and Davide Taibi</i>	
Doctoral Student Consortium	
A Robust and Non-invasive Strategy for Preserving Academic Integrity in an Open and Distance Learning Environment	530
<i>Alexander Amigud, Joan Arnedo-Moreno, Thanasis Daradoumis, and Ana-Elena Guerrero-Roldan</i>	
Lean Research Culture: Measurement, Analysis, and Revitalization of Processes and Outcomes of Contemporary Research Practices	533
<i>Geetha Paulmani</i>	
An Investigation of the Needs on Educational Robots	536
<i>Ya-Wen Cheng, Pei-Chen Sun, and Nian-Shing Chen</i>	
Towards an Adaptive and Ubiquitous Learning Architecture	539
<i>Rafael D. Araújo, Renan G. Cattelan, and Fabiano A. Dorça</i>	
Exploring the Potential of Game-Based Learning in Massive Open Online Courses	542
<i>Christiane Hagedorn and Christoph Meinel</i>	
Author Index	545