Preface ...................................................................................................................................................................................................................... xviii
List of Chairs and PC Members ...................................................................................................................................................................................... xix
List of Additional Reviewers .................................................................................................................................................................................. xxvi

Track 1. Digital Systems for Open Access to Education and Learning (i-OPENLearn@ICALT2016)

Being Social or Social Learning: A Sociocultural Analysis of the FutureLearn MOOC Platform ......................................................................................................................................................................................... 1
  Philip Tubman, Murat Oztok, and Phil Benachour

Designing an Open and Flexible Tutorial Eco-System for Web Application & Services ................................................................. 3
  Xiang Feng, Linli Wu, Jian Wang, Hong Zhou, and Yonghe Wu

MOOC for Skill Development in 3D Animation: Comparing Learning Perceptions of First Time and Experienced Online Learner ..................................................................................................................... 6
  Sameer S. Sahasrabudhe and Rwitajit Majumdar

Studying Co-Tagging Networks in Learning Object Repositories ........................................................................................................... 8
  Panagiotis Zervas, Charalampos Alifragkis, and Demetrios G. Sampson

Studying Social Tagging Systems in Learning Object Repositories: An Empirical Study of the Tag Vocabulary Growth ......................... 13
  Panagiotis Zervas and Demetrios G. Sampson

Track 2. Adaptive and Personalised Technology-Enhanced Learning (APTeL@ICALT2016)

A Latent Semantic Analysis Method to Measure Participation Quality Online Forums .............................................................................. 18
  Daniel Rubio and Jorge Villalon

Automated Segmentation of MOOC Lectures towards Customized Learning .......................................................................................... 20
  Xiangrong Zhang, Chen Li, Shang-Wen Li, and Victor Zue
Developing a Data-Driven Learning Interest Recommendation System to Promoting Self-Paced Learning on MOOCs

Hsuan-Ming Chang, Tonny Meng-Lun Kuo, So-Chen Chen, Chia-An Li, Yi-Wei Huang, Yu-Cheng Cheng, Hao-Hsuan Hsu, Nen-Fu Huang, and Jian-Wei Tzeng

EVA: Exploratory Learning with Virtual Companions Sharing Attention and Context

Scott W. Greenwald, Markus Funk, Luke Loreti, David Mayo, and Pattie Maes

Evaluating the Impact of Mars and Venus Effect on the Use of an Adaptive Learning Technology for Portuguese and Mathematics

Sivaldo J. de Santana, Ranilson Paiva, Ig Ibert Bittencourt, Patricia Espinheira Ospina, Rafael de Amorim Silva, and Seiji Isotani

Exploring How to Adaptively Apply Tutorial Dialogue Tactics

Sandra Katz, Pamela Jordan, and Patricia Albacete

Facilitating Comprehension of Non-Native English Speakers During Lectures in English with STR-Texts

Rustam Shadiev, Yueh-Min Huang, and Ting-Ting Wu

Insights on the Interplay between Adaptive Learning and Learning Analytics

Anna Mavroudi, Michail Giannakos, and John Krogstie

Modelling Students' Algebraic Knowledge with Dynamic Bayesian Networks

Henrique Seffrin, Ig I. Bittencourt, Seiji Isotani, and Patricia A. Jaques

Optimization of Personalized Learning Pathways Based on Competencies and Outcome

Jianhua Lin

PeerLA - Assistant for Individual Learning Goals and Self-Regulation Competency Improvement in Online Learning Scenarios

Johannes Konert, Christoph Bohr, Henrik Bellhäuser, and Christoph Rensing

Rethinking Learning Design for Learning Technologies: A Formalized Vision to Operationalize Pattern-Based Scenarios

Zeyneb Tadjine, Lahcen Oubahssi, Claudine Piau-Toffolon, and Sébastien Iksa

Selection and Composition of Personalization Parameters in Cloud

Sameh Ghallabi, Fathi Essalmi, Mohamed Jenmi, and Kinshuk

Semantic Feedback for Paper-Based Programming Exams

I-Han Hsiao and Sesha Kumar Pandhalkudi Govindarajan

The Class Connect Experimental Test-Bed: Pedagogical and Architectural Design Considerations for E-Learning

Chris Leberknight, Jeffrey Adamski, and Sebastian Kufel

Use of Adaptive Learning to Prepare First-Year Pharmacy Students: Our Experience
Virtual Reality Systems for Training Improvement in Electrical Distribution Substations ..............................75

Yasmin Hernandez and Miguel Perez Ramirez

Track 3. Wireless, Mobile, Pervasive and Ubiquitous Technologies for Learning (WMUTE@ICALT2016)

A Context Aware Learning Application for Communities of Service Technicians ........................................77

Christoph Rensing

An Authoring System for Adaptive Mobile Learning Content .................................................................82

Tobias Moebert, Julius Hoefler, and Ulrike Lucke

Bayesian Network for Predicting Students’ Final Grade Using e-Book Logs in University Education ............................85

Kousuke Mouri, Fumiya Okubo, Atsushi Shimada, and Hiroaki Ogata

Effects of Push Notifications on Learner Engagement in a Mobile Learning App .............................................90

Xuan-Lam Pham, Thi-Huyen Nguyen, Wu-Yuin Hwang, and Gwo-Dong Chen

Exploring the Effects of Discovery Learning Strategy for Location-Based Historic Retrospection Mobile Game .................................................................95

Shu Wei Liu and Chang Hwa Wang

From Tabletops to Multi-Tablet Environments in Educational Scenarios: A Lightweight and Inexpensive Alternative ...............................................................100

Fernando Garcia-Sanjuan, Javier Jaen, and Vicente Nacher

Six Years of Teaching Mobile Computing: What We Have Learned ........................................................................102

Brian G. Burton and Barbara N. Martin

Understanding the Participant Behaviors in the Online English Learning Mobile App: A Case Study among 106,912 Learners via Google Play App Store ........................................................................104

Huyen Nguyen-Thi, Wu-Yuin Hwang, Xuan-Lam Pham, and Gwo-Dong Chen

Track 4. Digital Game and Intelligent Toy Enhanced Learning (DIGITEL@ICALT2016)

A Video Comic Drama Based Learning System for Collaborative Learning ..................................................109

Wen-Liang Chung, Wei-Yi Wu, Chung-Li Wu, De-Yuan Huang, Chi-Wen Huang, and Gwo-Dong Chen

An Educational Game Based on Images and Semantic Web Technologies ......................................................112

Bernardo Pereira Nunes, Giseli Rabello Lopes, Terhi Nurminko-Fuller, Marco A. Casanova, and Sean W. M. Siqueira

An Investigative Process for Enhancing the Design of a Mathematics Learning Game ......................................117

Vani Kalloo, Permanand Mohan, and Kinshuk

Co Design of Augmented Reality Game-Based Learning Games with Teachers Using Co-CreaARBGL Method .......................................................................................120

Hendrys Tobar-Munoz, Silvia Baldiris, and Ramon Fabregat
Development of Game Software Based on Color Universal Design ............................................................123
Kazuya Takemata, Tsubasa Takeda, Misa Tanaka, and Akiyuki Minamide

Downtown, a Subway Adventure: Using Learning Analytics to Improve the Development of a Learning Game for People with Intellectual Disabilities ............................................................125
Ana R. Cano, Baltasar Fernández-Manjón, and Álvaro J. García-Tejedor

Evaluating the Usability of a Tangible-Mediated Robot for Kindergarten Children Instruction ..................................................130
Vicente Nacher, Fernando Garcia-Sanjuan, and Javier Jaen

Game-Based Evacuation Drills Using Simple Augmented Reality ........................................................................133
Hiroyuki Mitsuhara, Masami Shishibori, Junya Kawai, and Keisuke Iguchi

Gamification - A Structured Analysis ..................................................................................................................138
Alke Martens and Wolfgang Mueller

Self-Assessment Through Interactive In-Action Reflections to Improve Interpersonal Skills Training ..........................................................143
Diego Rivera-Gutierrez, Andrea Kleinsmith, Gail Childs, Roberta Pileggi, and Benjamin Lok

Teaching STEM through a Role-Playing Serious Game and Intelligent Pedagogical Agents ..................................................148
A. Terracina, R. Berta, F. Bordini, R. Damilano, and M. Mecella

Towards a Generic UML Model to Support Designing Educational Role Playing Games ..........................................................153
Ahmed Tlili, Fathi Essalmi, Leila Jemni Ben Ayed, Mohamed Jemni, and Kinshuk

Track 5. Computer Supported Collaborative Learning (CSCL@ICALT2016)

Bringing Balance to the Forces of Learning Design: Integrating Self-Regulated Planning and Scripting via Model Transformations ..........................................................158
Andreas Harrer and Andreas Lingnau

Collaborative Problem-Solving Process in a Web-Based Anchored Instruction ..................................................163
Dai-Yi Wang

How S-IDEAL Model Promotes Deeper Science Learning in SPOCs: Preliminary Design-Based Research ..........................................................166
Tonny Meng-Lun Kuo and Shelley Shwu-Ching Young

Implementing Robotic Telepresence in a Synchronous Hybrid Course ..................................................171
William Cain, John Bell, and Cui Cheng

Measuring and Visualizing Individual Contributions in Online Collaborative Discussions ..........................................................176
Chang Xu, Yafeng Zheng, Hening Hu, and Yanyan Li
PLATE-PBL: Development and Implementation of a Script-Based PBL Environment in Moodle

Zeyad Ali, Disi Wang, Mohammed Samaka, and Yongwu Miao

Predicting Student Performance and Differences in Learning Styles Based on Textual Complexity Indices Applied on Blog and Microblog Posts: A Preliminary Study

Elvira Popescu, Mihai Dascalu, Alex Becheru, Scott Crossley, and Stefan Trausan-Matu

Visualization of Teacher Social Capital in a Computer-Supported Engineering Education Teacher Professional Development Program

Wei Zakharov and Johannes Strobel

Track 6. Technology-enhanced Assessment in Formal and Informal Education (TeASSESS@ICALT2016)

A Computational Architecture for Learning Analytics in Game-Based Learning

Heraclito A. Pereira Jr., Alberto F. De Souza, and Credinê S. De Menezes

A Software Tool to Measure the Alignment of Assessment Instrument with a Set of Learning Objectives of a Course

Rekha Ramesh, M. Sasikumar, and Sridhar Iyer

Computer Aided Evaluation of Multi-Step Answers to Algebra Questions

Buddhiprabha Erabadda, Surangika Ranathunga, and Gihan Dias

Cost and Benefit of a Computer Supported Real Time Delphi Method on Inter-Rater Reliability Using Rubrics in Highly Subjective Evaluation Tasks

Jorge Villalon, Alejandra Beghelli, and Jose Merino

Expert System for Generating Teaching Plan Based on Measurable Learning Objectives and Assessment

Patil Deepti Reddy and Alka Mahajan

Lessons Learned from Students’ Cheat Sheets: Generic Models for Designing Programming Study Guides

I-Han Hsiao and Claudia López

Solution Authoring via Demonstration and Annotation: An Empirical Study

Karen Myers and Melinda Gervasio

Treasure Explorers — A Game as a Diagnostic Assessment Tool

Bernardo Pereira Nunes, Terhi Nurmikko-Fuller, Giseli Rabello Lopes, Sean W. M. Siqueira, Gilda H. B. de Campos, and Marco A. Casanova
Track 7. Big Data in Education and Learning Analytics (BDELA@ICALT2016)

A Visualization Tool for Learning Statistical Analysis in Multi Tabular Datasets .........................................................222

Kamasan Vaishnavi, Ashwin Kannan, David Cline, and Ronak Etemadpour

An Analysis of Educational Technology Publications from January 1995
to December 2014 ....................................................................................................................................................................................227

Gloria Natividad Beltran del Rio

An EDM Approach to the Analysis of Students’ Engagement in Online Courses
from Constructs of the Transactional Distance ..............................................................................................................................230

João C. Sedraz Silva, Jorge L. C. Ramos, Rodrigo Lins Rodrigues, Alex Sandro Gomes,
Fernando da Fonseca de Souza, and Alexandre Magno Andrade Maciel

Discovering Level of Participation in MOOCs through Clusters Analysis ..................................................................................232

Rodrigo Lins Rodrigues, Jorge L. C. Ramos, João C. Sedraz Silva, Alex Sandro Gomes,
Fernando da Fonseca de Souza, and Alexandre Magno Martins Maciel

Dutch Cooking with xAPI Recipes: The Good, the Bad, and the Consistent ..............................................................234

Alan Berg, Maren Scheffel, Hendrik Drachsler, Stefaan Ternier, and Marcus Specht

Evaluation of Learner Performance During Practical Activities: An Experimentation
in Computer Education ...........................................................................................................................................................................237

Rémi Venant, Philippe Vidal, and Julien Broisin

Extracurricular Activities as Dropout Prediction Factors in Higher Education Using
Decision Trees ......................................................................................................................................................................................242

Tomas Hasbun, Alexandra Araya, and Jorge Villalon

Improving the User-Friendliness of AAT through a Staged Evaluation ..............................................................245

Tamra Ross, Ting-Wen Chang, Cindy Ives, Nancy Parker, Andrew Han, and Sabine Graf

Using Ranking and Multiple Linear Regression to Explore the Impact of Social Media
Engagement on Student Performance .............................................................................................................................................250

Paul Ştefan Popescu, Marian Cristian Mihăescu, Elvira Popescu, and Mihai Mocanu

Track 8. Technology-Enhanced Science, Technology, Engineering
and Math Education (TeSTEM@ICALT2016)

An Empirical Study of Online K-12 Education for Programming Games ..................................................................................255

Thiago Reis da Silva and Eduardo Henrique da Silva Araújo

Augmenting Mathematical Education for Minority Students ..............................................................................................260

TeAirra M. Brown, Tiffanie R. Smith, Joseph L. Gabbard, and Juan E. Gilbert

Effect of Energy Monitoring Activities on Climate Change Beliefs and Intentions:
Replication of Findings at Multiple Project Locations ..............................................................................................265

Rhonda Christensen and Gerald Knezek
Engaging Students in Learning Science and Technology Using Students-Generated Educational Videos .............................. Cui Lan Wang and Qing Shao

Engineers as Role Models: Strengthening Student Desire to Participate in Science .............................................................. Leila A. Mills

Enhancing Learning Attitudes and Performance of Students in Physics with a Mastery Learning Mechanism-Based Personalized Learning Support System ........................................ Charoenchai Wongwatkit, Niwat Srisawasdi, Gwo-Jen Hwang, and Patcharin Panjaburee

Exploring Online Programming-Related Information Seeking Behaviors via Discussion Forums .............................................. Yihan Lu, I-Han Hsiao, and Qi Li

Identifying the Potential of Danmaku Video from Eye Gaze Data ...................................................................................... Jing Leng, Jiayu Zhu, Xiaoting Wang, and Xiaoqing Gu

Introducing Computer Engineering Curriculum to Upper Secondary Students: An Evaluation of Experiences Based on Educational Robotics .......................................................... Marco Oreggia, Carlo Chiorri, Francesca Pozzi, and Armando Tacchella

Lesson Planner Tool for Supporting Teachers to Create Pedagogically Sound Learning Resources ........................................ Aoife Brady, Owen Conlan, and Vincent Wade

Reveal the Key Factors in Affecting the SPOC-Supported Course: Data and Survey Analysis for Data Structures Course in USTB........................................................................................... Qiming Huang

The “Concept Cloud”: Supporting Collaborative Knowledge Construction Based on Semantic Extraction from Learner-Generated Artefacts ................................................................. Sven Manske and H. Ulrich Hoppe

The Acceptance of Learning Augmented Reality Environments: A Case Study ...................................................................... Maria Blanca Ibáñez, Ángela Di Serio, Diego Villarán, and Carlos Delgado-Kloos

The Impact of a Mobile Augmented Reality Game: Changing Students’ Perceptions of the Complexity of Socioscientific Reasoning ........................................................................ Hsin-Yi Chang, Yuan-Tse Yu, Hsin-Kai Wu, and Ying-Shao Hsu

Towards a Teaching Analytics Tool for Supporting Reflective Educational (re) Design in Inquiry-Based STEM Education ........................................................................................................ Stylianos Sergis and Demetrios G. Sampson

Track 9. Technology Enhanced Language Learning (TELL@ICALT2016)

A Pilot Evaluation of the Chinese Learning System to Support a Flipped Classroom .......................................................... Yi-Hsuan Wang
An Animated Pedagogical Agent on a CALL System Lecturing about the English Present Perfect Tense to Brazilian Students

Talvany Carlotto and Patricia A. Jaques

Design of an Online Multimedia Learning System for Improving Students’ Perceptions of English Language Learning

Yi-Ting Huang, Tzu-Chi Yang, Meng Chang Chen, Chien-Ming Chen, and Yeali S. Sun

Gesture-Based Learning for Preschooler: A Case Study of Teaching English Alphabet and Body Parts Vocabulary

Chia-Ning Hsu, I-Ling Cheng, Sie Wai Chew, Guan Ying Wu, Chun-Yu Zhu, Pin-Yang Liu, and Nian-Shing Chen

Improvements to a Learning Design: The Combination of Mobile Application for Summary Speaking Task by Self-Study and Pair Work in a Class: The Effectiveness in Scaffolding Tasks and Visualizing Learning Achievement

Kae Nakaya and Masao Murota

Language Assessment Literacy Enhancement: Any Room for Technology-Enhanced Language Learning?

Anna Mavroudi and Dina Tsagari

Onomatopoeia Learning Support for Japanese Language Learners Using Ubiquitous Learning Log System with eBook

Noriko Uosaki, Mahiro Kiyota, Kousuke Mouri, Hiroaki Ogata, and Mahdi Choyekh

Track 10. Motivational and Affective Aspects in Technology-enhanced Learning (MA-TEL@ICALT2016)

A Model for Learning-Enhancing Work Design in a Digitized World

Roman Senderek

A Pilot Study of Students’ Perceptions of Collaborative Knowledge Building in 21st Century Learning with Their Knowledge Building Behaviors

Pei-Shan Tsai, Ching Sing Chai, Yen-Yuan Chen, Min-Hsien Lee, Jyh-Chong Liang, and Chin-Chung Tsai

Annotation Agreement of Emotions in Text: The Influence of Counsellors’ Emotional State on their Emotion Perception

Emmanuel Awuni Kolog, Calkin Suero Montero, and Erkki Sutinen

Cognitive Task Performance in Technology-Enhanced Learning Environments

Deborah Cockerham, Zhengsi Chang, Mike Schellen, and Lin Lin

How an Affective Learning Environment for Learning Java Impacts the Student’s Learning Results

Maria Lucía Barrón-Estrada, Ramón Zatarain-Cabada, Raúl Oramas-Bustillos, and Giner Alor-Hernández
Infographics or Graphics+Text: Which Material is Best for Robust Learning? .................................................................366
  Kamila T. Lyra, Seiji Isotani, Rachel C. D. Reis, Leonardo B. Marques, Lais Z. Pedro,
  Patricia A. Jaques, and Ig Ibert Bitencourt

Students Effort vs. Outcome: Analysis Through Moodle Logs .................................................................371
  Ana Paula Scariot, Fábio Goulart Andrade, Júlia Marques Carvalho da Silva,
  and Hazra Imran

The Cognitive and Social Motivational Affordances of Gamification in E-Learning Environment ........................................373
  Sumayah Abu-Dawood

  Lanqing Zheng and Xin Li

The Effects of Physical form and Embodied Action in a Teachable Robot for Geometry Learning ........................................381
  Erin Walker, Victor Girotto, Younsu Kim, and Kasia Muldner

The Framework of Digital Learning Capacity for Digital Natives ................................................................................386
  Rongxia Zhuang, Junfeng Yang, Bo Li, Ying Zhang, and Ronghuai Huang

**Track 11. Technology Enabled Learning of Thinking Skills (TELoTS@ICALT2016)**

Best Practices in WebQuest Design: Stimulating the Higher Levels of Bloom’s Taxonomy .................................................................391
  Sergio Santos Silva Filho and Rodrigo Bonacin

Impact of Using Creative Thinking Skills and Open Data on Programming Design in a Computer-Supported Collaborative Learning Environment .................................................................396
  Jia Wei Chang, Tzone-I Wang, Ming-Che Lee, Chien-Yuan Su, and Po-Chin Chang

Investigating the Use of Simulation Model for Teaching Engineering Design .................................................................401
  Chandan Dasgupta

Learning E-Commerce Web Design Engineering: Towards Discovery of Service Innovational Opportunities .........................................404
  Chien-Sing Lee and K. Daniel Wong
Track 12. Recommender and Decision Support Systems for Learning (ReSyL@ICALT2016)

Finding Topical Experts in Question & Answer Communities .................................................................407
   Thiago B. Procaci, Bernardo Pereira Nunes, Terhi Nurmikko-Fuller,
   and Sean W. M. Siqueira

Learning Object Recommendation System Evaluation .............................................................................412
   Marcio Santos, Fábio Andrade, Júlia Marques Carvalho da Silva, and Hazra Imran

Let Me Do It: Towards the Implementation of Sustainable Instructional Patterns ..................................414
   Anna Mavroudi, Miltos Miltiadous, Paul Libbrecht, Wolfgang Müller,
   Thanasis Hadzilacos, Nuno Otero, Karl Barth, and Koula Georgiou

Pre-Course Key Segment Analysis of Online Lecture Videos ................................................................416
   Xiaoyin Che, Thomas Staubitz, Haojin Yang, and Christoph Meinel

Research on Educational Decision Supporting System of Compulsory Education
Policy ...........................................................................................................................................................421
   Yaofeng Xue, Wei Guo, and Xiaqing Gu

Supporting Users of Open Online Courses with Recommendations: An Algorithmic Study
.....................................................................................................................................................................423
   Soude Fazeli, Enayat Rajabi, Leonardo Lezcano, Hendrik Drachsler, and Peter Sloep

Use Educational Data Mining to Predict Undergraduate Retention .......................................................428
   Steven Lehr, Hong Liu, Sean Kinglesmith, Alex Konyha, Natalia Robaszewska,
   and Jacob Medinilla

Track 13. Technology Supported Education for People with Disabilities (TeDISABLE@ICALT2016)

Augmented Reality Experiences in Therapeutic Pedagogy: A Study with Special Needs Students ..........431
   Sara Cebrián Cifuentes, Soledad Gómez García, M. Puig Andrés-Sebastiá,
   Jorge D. Camba, and Manuel Contero

Drawing for Blind Learners: Assistive Technology for Graphical Design .............................................436
   James Ohene-Djan and Sandra Fernando

The Effect of Avatar Technology on Sign Writing Vocabularies Acquisition for Deaf Learners ..............441
   Yosra Bouzid, Mohamed Ali khenissi, and Mohamed Jemni

The Process of Inclusive Design ..................................................................................................................446
   Ulrike Lucke and Thais Castro

Zirkus Empathico: Mobile Training of Socio-Emotional Competences for Children with Autism ............448
   Dietmar Zoerner, Jan Schütze, Simone Kirst, Isabel Dziobek, and Ulrike Lucke
Track 14. Smart Learning Environments (SLE@ICALT2016)

Designing Authentic Learning to Meet the Challenges of Digital Natives in First-Year Program: An Action Research in Chinese University .................................................................453
  Wei Cheng, Pen Chen, Xiaolin Liu, and Ronghuai Huang

Influence of Digital Equipment on Interaction Quality in Technology-rich Classroom .........................................................455
  Xiao-Chen Wang, Siu-Cheung Kong, and Rong-Huai Huang

Meta-Analysis in Educational Technology Research: A Content Analysis .................................................................460
  Zhengcheng Fan, Wei Cheng, Guang Chen, and Ronghuai Huang

Modeling the Process of ICT in K-12 Schools by Analyzing Typical Exemplars in Global Context .........................................................463
  Jing Du, Ronghuai Huang, Xiaolin Liu, and Wei Cheng

Predicting Grades by Principal Component Analysis: A Data Mining Approach to Learning Analytics .........................................................465
  Alvaro Figueira

SCALE: A Smart Competence Analytics Solution for English Writing .................................................................468
  David Boulanger, Jeremie Seanosky, Clayton Clemens, Vivekanandan Kumar, and Kinshuk

Technical Approaches for Personal Learning Environments: Identifying Archetypes from a Literature Review .........................................................473
  Alexander Kiy and Ulrike Lucke

Track 15. Maker Spaces and 3-D Printing Based Innovations (Make&3DPrint@ICALT2016)

A Systemic Analysis of Making in Elementary Schools: Understanding Making for Children through Activity Theory .........................................................478
  Sharon Lynn Chu, Genna Angello, Francis Quek, and Mario Suarez

Digital Fabrication for STEM Projects: A Middle School Example .................................................................483
  Alicia Stansell and Tandra Tyler-Wood

Smart Cup, Wisdom Creation: A Project-Based Learning Initiative for Maker Education .........................................................486
  Haonan Wang, Chun Zhou, and Yonghe Wu

Teaching Science and Engineering through Reconstruction of Historic Inventions .........................................................489
  Glen Bull, Nigel Standish, and Tandra Tyler

Track 16. Wearable Technologies in Education (WearTech@ICALT2016)

Exploring the Difference in Brain Activities under Three Distinct Tasks: Listening to Music, Gaming, and Learning .........................................................493
  I-Ling Cheng, Sie Wai Chew, Yihuang Kang, Weilun Chang, and Nian-Shing Chen

WearTec: Empowering Youth to Create Wearable Technologies .........................................................498
  Jennifer Keshwani, Brad Barker, Gwen Nugent, and Neal Grandgenett
Yet Another Objective Approach for Measuring Cognitive Load Using EEG-Based Workload ..................................................................................................................................................................................................................501

Hao-Cheng Chang, I-Chun Hung, Sie Wai Chew, and Nian-Shing Chen

Track 17. Virtual Worlds in Education and Training (VWET@ICALT2016)
A Case Study of the Characteristics of MOOCs Completers: Taking an Online Professional Training MOOC for Example..................................................................................................................................................503

Qiuju Li and Fangyi Wan

A Review of Design-Based Research ........................................................................................................................................................................................................506

Sheng-Shiang Tseng, Shih-Hsien Yang, and Hui-Chin Yeh

A Review of Trends in Digital Game-Based Language Learning Research ........................................................................................................................................................................................................508

Hsiu-Ting Hung, Jo-Ling Chang, and Hui-Chin Yeh

Assessing Students’ Conceptual Knowledge of Computer Networks in Open Wonderland ..................................................................................................................................................................................................................513

Kavya Alse, Lakshmi Ganesh, Prajish Prasad, Maiga Chang, and Sridhar Iyer

Creating a 3D Game-Based Learning System in a Virtual World for Low-Achieving Students in Mathematics ........................................................................................................................................................................................................518

Indy Y. T. Hsiao, Stephen J. H. Yang, Tzi-Li Chang, Yu-Heng Wei, and Yu-Ju Lan

Creating a Virtual Language Learning Environment in Second Life ........................................................................................................................................................................................................520

Indy Y. T. Hsiao, Chia-Ling Kao, Yi-Chun Tsai, Yen-Ting Lin, and Yu-Ju Lan

Endodontic Simulator for Training the Access to the Pulp Chamber and Root Canal Preparation Tasks ........................................................................................................................................................................................................523

Tales Nereu Bogoni, Gregory de Oliveira Feijó, Roberta Kochenborger Scarparo, and Márcio Sarroglia Pinho

Game Based Learning of Blood Clotting Concepts ........................................................................................................................................................................................................526

Anurag Deep, Prajish Prasad, Soumya Narayana, Maiga Chang, and Sahana Murthy

How Student Teachers’ Online Commentaries Scaffold Student Writing ........................................................................................................................................................................................................531

Shih-Hsien Yang, Hsiu-Ting Hung, and Hui-Chin Yeh

Impact of Frame of Reference on Memorization in Virtual Environments ........................................................................................................................................................................................................533

Thomas Jund, Antonio Capobianco, and Frédéric Larue

WhyPower and Careers with Mathematics: How Middle School Students Responded in a Virtual World........................................................................................................................................................................................................538

Cliff Zintgraff and Ed Fuller

Doctoral Consortium
Automating the Formation of Sporadic Groups and the Selection of Topics for Online Language Learning Driven by Personality Traits and Interest Profiles ........................................................................................................................................................................................................540

Roberto Agustín García Vélez, Martín López-Nores, and Yolanda Blanco Fernández
Categorization of Embodied User Interface in Immersive Virtual Environment ................................................................. 543

Jewoong Moon and Fengfeng Ke

Engaging Students with Computer Science through Creativity: Toward Better Understanding and Improved Methods .......................................................................................................................... 546

Sofia Papavlasopoulou

Evaluating Student and Instructor Use of Video Feedback in an Online Learning Environment ........................................................................................................................................................................... 549

Gwendolyn M. Morel

STEM Professional Volunteers in Secondary STEM Education: A Study Proposal to Better Understand the Practices of Educators ........................................................................................................................................ 552

Cliff Zintgraff

Towards Business Process Management Based Workplace e-Learning .................................................................................. 555

Venkatapathy Subramanian

Author Index ......................................................................................................................................................................................................... 558