Contents

Emerging Technologies of Design, Model and Framework of Learning Systems

Effect of Using Digital Pen Teaching System Behaviors on Learning Achievements in a Mathematics Course .......................... 3
   Yu-Sheng Su, Ting-Jou Ding, Po-Han Wu, and Chiu-Nan Su

Satisfaction Analysis for Agricultural Worker Digital Course Learning Platform .................................................. 9
   Jui-Hung Chang, Ren-Hung Hwang, and Hung-Hsi Chiang

Emerging Technologies Supported in ICT Education .................................. 19
   Leila Goosen and Toppie N. Mukasa-Lwanga

System of Information Systems as Support for Learning Ecosystem ........ 29
   Saleh Majd and Abel Marie-Hélène

A User Study About the Usage of a Learning Management System in a South African University .......................... 38
   Liezel Cilliers, Siyanda Ntlabathi, and Palesa Makhetha

Emerging Technologies Support for Intelligent Tutoring

Efficacies of 3D Immersive Virtual World Classrooms .................................................. 45
   Judy F. Chen, Clyde A. Warden, and Hsiu Ju Lin

Using the Gartner Hype Cycle to Evaluate the Adoption of Emerging Technology Trends in Higher Education – 2013 to 2016 ....................... 49
   Tania Prinsloo and J.P. Van Deventer

An Analysis of 3D-Printing Familiarity Among Students in a Technical University ................................................ 58
   Kuen-Ming Shu, Chi-Cheng Chang, and Yih-Her Yan

Lecturers Perceptions on Blackboard: An Investigation of Blackboard Usage in a Nursing Department at a Traditional University .................. 64
   Liezel Cilliers and Elzette van Niekerk

Emerging Technologies Support for Game-Based and Joyful Learning

The Use of a Learning Management System to Facilitate Student-Driven Content Design: An Experiment .......................... 75
   Riana Steyn, Solly Millard, and Joyce Jordaan
A Curriculum Approach to Improving Cyber Safety
in South African Schools ................................................. 95
  E. Kritzinger

Towards Understanding How Game Based Learning Can Enhance
Flipped Learning .......................................................... 106
  M.J. Hattingh and S. Eybers

Can Video (Created with PowerPoint and TTSAPP) Replace
“Normal” Lectures? ......................................................... 116
  Robert Huberts

Effectiveness of Learning with the Support of a Virtual Environment
(Experiment in University Teaching) ..................................... 125
  Hana Mohelska and Marcela Sokolova

Emerging Technologies of Pedagogical Issues

The Design of a STEM-Oriented Project-Based Course for the Higher
Grades of Elementary Schools ......................................... 137
  Yi-wen Lin and Tzone-I Wang

Scorecard Approach for Cyber-Security Awareness .................... 144
  Tsosane Shabe, Elmarie Kritzinger, and Marianne Loock

Using AHP to Project-Based Learning Develop in Machinery
Manufacturing of Technology Universities Students .................. 154
  Dyi-Cheng Chen, Ci-Syong You, and Ying-Chia Huang

Introducing the Maker Movement to Information Systems Students .... 161
  Machdel Matthee, Marita Turpin, and Dennis Kriel

LeSigLa_EC: Learning Sign Language of Ecuador ...................... 170
  D. Rivas, M. Alvarez, W. Tamayo, V. Morales, R. Granizo, G. Vayas,
  V. Andaluz, M. Huerta, and G. Clotet

Pre-exit Survey of Final Year Students to Assess the Mechanical
Engineering Curriculum .................................................. 180
  Emmanuel Glakpe and Esther Akinlabi

Innovative Project-Based Learning ...................................... 189
  Ren-Hung Hwang, Pao-Ann Hsiung, Yau-Jane Chen,
  and Chin-Feng Lai

Selected Factors Supporting the Learning Organization ................ 195
  Vaclav Zrub and Hana Mohelska
Factors Influencing Social Media Adoption and Continued Use in Academia: A Case Study at a Traditional University ............... 203

_Liezel Cilliers and Obrain Murire_

**Emerging Technologies Supported Personalized and Adaptive Learning**

Generalization of Tooltips: An Assistive Technology Extension ............ 213

_Saira-Banu Adams, William D. Tucker, and Isabella M. Venter_

An Accurate Brainwave-Based Emotion Clustering for Learning Evaluation...

_Ting-Mei Li, Hsin-Hung Cho, Han-Chieh Chao, Timothy K. Shih, and Chin-Feng Lai_

System of Evaluation for Reading Based on Eye Tracking ............... 234

_D. Rivas-Lalaleo, V. Luna, M. Álvarez, V. Andaluz, W. Quevedo, A. Santana, G. Vayas, M. Navas, and M. Huerta_

**Emerging Technology and Engineering Education**

Teaching of IA-32 Assembly Language Programming
Using Intel® Galileo .................................................. 245


Identifying Drivers of Remanufacturing in Nigeria ............... 252

_Ifije Ohiomah, Clinton Aigbavboa, and Jan-Harm Pretorius_

Factors Affecting the Evolution of Welding and Fabrication Education from the Perspective of Engineering Technology Graduates in Nigeria. ...... 260

_Eghosa Eguabor, Clinton Aigbavboa, and Jan-Harm Pretorius_

Industry Expectation from Graduates of Welding and Fabrication from the Perspective of Engineering Technology Graduates in Nigeria. .... 269

_Eghosa Eguabor, Clinton Aigbavboa, and Jan-Harm Pretorius_

Benefits of Minimised Wastage in Construction Sites: A Gauteng Province Case Study ................................................. 278

_Godfey Shai Thaphelo, Clinton Aigbavboa, and Ohiomah Ifije_

Introduction of Construction Experience to the Classroom:
What Approaches Should Be Adopted .................................. 284

_Aliu John and Aigbavboa Clinton_
SpeL (International Workshop on Social and Personal Computing for Web-Supported Learning Communities)

A Platform for Developing and Maintaining Competences in PBL Supervision ........................................ 297
  Dorina Gnaur and Hans Hüttel

Website Analysis in the Context of Practicing Geography: From First Impression to Recommendation – Case Study. .................. 304
  Miloslava Cerna

Adaptive Practising Using Mobile Touch Devices .................................................. 314
  Libor Klubal, Katerina Kostolanyova, and Vojtech Gybas

Using Social Media to Enhance Student Engagement .......................... 320
  Audrey J.W. Mbogho

Evaluation of the Blended Learning Approach in the Course of Business English – A Case Study .......................... 326
  Blanka Klimova

Modeling a Peer Assessment Framework by Means of a Lazy Learning Approach ........................................ 336
  Maria De Marsico, Andrea Sterbini, Filippo Sciarrone, and Marco Temperini

ADOILS (Application and Design of Innovative Learning Software)

A Framework Design for On-line Human Library ........................................ 349
  Tien-Wen Sung, Ting-Ting Wu, and Yi-Chen Lu

Design and Evaluation of Mobile Cuisine Guiding System for English Learning Applications .......................... 355

The Development of an Affective Tutoring System for Japanese Language Learners ........................................ 363
  Yu Chun Ma and Hao-Chiang-Koong Lin

A Study on the Behavioral Patterns Formed by Subjects with Different Cognitive Styles in Playing Augmented Reality Interaction Games ..... 372
  Meng-Chun Tsai and Hao-Chiang-Koong Lin

Exploration of Learning Effectiveness, Cognitive Load and Attitude on Mobile E-book Introduced in Nursing Education .......................... 382
  Lei Chang, Ting-Ting Wu, Chih Wei Chao, and Jim-Min Lin
The Ideal and Reality of Implementing Technology into English Language Teaching: A Case Study of Using a Peer Review System  

Wei-Wei Shen, Ming-Hsiu Michelle Tsai, and Jim-Min Lin


Andreja Istenic Starcic, Po-Sen Huang, Roza Alexeyevna Valeeva, Liliia Agzamovna Latypova, and Yueh-Min Huang

SLEEP (International Workshop on Smart Learning by Emerging Educational Paradigm)

Using Educational Robotics to Support Elementary School Students’ Electrical Engineering Knowledge: A Preliminary Analysis

Pan-Nan Chou and Yen-Ning Su

Understanding Students’ Continuance Intention to Use Virtual Desktop Service

Yong-Ming Huang and Chien-Hung Liu

Exploring the Development and Evaluation of Integrating Emerging Technology into a STEAM Project

Yu-Kai Chen and Chi-Cheng Chang

Inference of Learning Creative Characteristics by Analysis of EEG Signal

Shih-Yeh Chen, Chin-Feng Lai, Ren-Hung Hwang, Chu-Sing Yang, and Ming-Shi Wang

Developing a Curriculum of Maker Education in Taiwan

Tien-Chi Huang, Shu-Hsuan Chang, Vera Yu Shu, Preben Hansen, and Sung-Lin Lee

A Real-Time Assessment of Programming Through Debugging Log Analytic

Yu-Lin Jeng, Qing Tan, Yu Shu, and Sheng-Bo Huang

Using Facial Expression to Detect Emotion in E-learning System: A Deep Learning Method

Ai Sun, Ying-Jian Li, Yueh-Min Huang, and Qiong Li

Maker Movement Influence on Students’ Learning Motivation and Learning Achievement – A Learning Style Perspective

Jan-Pan Hwang
Synchronous Collaboration in English for Tourism Classes 463
YiChun Liu

The Jacobian Matrix-Based Learning Machine in Student 469
Yi-Zeng Hsieh, Mu-Chun Su, and Yu-Lin Jeng

UMLL (International Symposium on User Modeling and Language Learning)

Lexical Bundle Investigation for Automated Scoring of Business English Writing 477
Shili Ge, Xue Yu, and Xiaoxiao Chen

Designing Interactive Exercises for Corpus-Based English Learning with Hot Potatoes Software 485
Xiaowen Wang and Tianyong Hao

An Explicit Learner Profiling Model for Personalized Word Learning Recommendation 495
Di Zou, Haoran Xie, Tak-Lam Wong, Fu Lee Wang, Reggie Kwan, and Wai Hong Chan

Mobile-Assisted Language Learning: Using WeChat in an English Reading Class 500
Nana Jin

Discovering the Recent Research in Natural Language Processing Field Based on a Statistical Approach 507
Xieling Chen, Boyu Chen, Chunxia Zhang, and Tianyong Hao

A CRFs-Based Approach Empowered with Word Representation Features to Learning Biomedical Named Entities from Medical Text 518
Wenxiu Xie, Sihui Fu, Shengyi Jiang, and Tianyong Hao

Computer-Assisted Content Analysis in Risk Identification of Public-Private Partnership Projects 528
Yingying Qu

Pedagogical Principle Based E-learning Exploration: A Case of Construction Mediation Training 539
Yingying Qu, Zhiwen Yu, Hao Cong, and Tianyong Hao

An Approach to Constructing Sentiment Collocation Dictionary for Chinese Short Text Based on Word2Vec 548
Jianfeng Zhou, Boyu Chen, and Yangqing Lin
A Construction Method for the Semantic Relation Corpus
of Traditional Chinese Medicine ........................................ 557
   Jing Chen, Haitao Wang, Liangliang Liu, Xiaoru Zhang, Jing Zhao,
   Fan Zhang, and Xinyu Cao

Author Index ................................................................. 565
Emerging Technologies for Education
Tien-Chi Huang, V.; Lau, R.; Huang, Y.-M.; Spaniol, M.; Yuen, C.-H. (Eds.)
2017, XV, 567 p. 127 illus., Softcover
ISBN: 978-3-319-71083-9