# TABLE OF CONTENTS

**Student E-Presentations in Remote Learning Environments** ............................................... 1  
*Stephen Arnold, University of Arizona, United States*

**Cloud-based Technology and Student Writing Skills. Can we do Better?** ......................... 8  
*Mark Carbajal, Coastal Bend College, United States*

**Reflections on Promoting Engagement and Learning in Higher Education Multiplayer Online Role play Simulation Games (MORPSGs)** ........................................................................................................... 14  
*Roni Linser, Fablusi, Australia; Helen Hintjens, International Institute of Social Studies (ISS), Netherlands*

**Teachers’ Perceptions Regarding the Use of Google Classroom and Google Docs** ........................................................................................................................................................................ 21  
*Demian Morquin, Region One Education Service Center, United States; Linda Challoo, Texas A&M University-Kingsville, United States; Marybeth Green, Texas A&M University-Kingsville, United States*

**Barriers of a Digital Study Assistant - Classification within a Digital Transformation Taxonomy** ........................................................................................................................................................................... 31  
*Carla Tenspolde & Paul Greiff, Osnabrück University, Germany; Claudia König & Nadine Guhr, University Hannover, Germany; Uwe Hoppe, Osnabrück University, Germany*

**Optimally Reusable Learning Objects** .......................................................................................... 43  
*Richard Vranesh, CSSI, United States*

**An Exploratory Analysis of Textbook Usage in College Computer Programming Courses** ........................................................................................................................................................................... 51  
*Xue Bai & Ade Ola, Virginia State University, United States; Yingjin Cui, Northern Virginia Community College, United States*

**The Potential for Learning through Social Media in Various Educational Environments** ........................................................................................................................................................................... 58  
*Aubrey Statti & Kelly Torres, The Chicago School of Professional Psychology, United States*

**Integrating Technology and Education: A Look at the Implementation of Advanced Technology to Diversify Online Learning and Teaching** ........................................................................................................................................................................... 64  
*Tamra Kelly & Ashley Atwood, Angelo State University, United States*

**Evolution of a YouTube Channel** .................................................................................................. 72  
*Peggy Semingson, University of Texas at Arlington, United States; Leigh Hall, University of Wyoming, United States*

**Examining Perceptions of Digital Badges** .................................................................................. 78  
*Mellissa Sanchez, University of North Texas, United States*
Using Universal Design for Learning to Create Effective Online Assessments ................................. 82
Melanie Shores, The University of Alabama at Birmingham, United States

Time is of the Essence: Log-Based Investigation of the Interplay between Feedback Elaboration, Time to Process Feedback, and Task Success in Online Mathematics ................................................................. 86
Tomer Gal & Arnon Hershkovitz, Tel Aviv University, Israel

The Syllabus Quiz as an Indicator of Course Performance ................................................................. 98
Dan Keast, University of Texas of the Permian Basin, United States

Online Quizzes in the day of Siri and Alexa: Measuring the learning of the student, not the personal assistant. ................................................................. 102
Olivia Miller, University of Phoenix, United States

Emotional Teaching Strategies in Japanese Technology Education ................................................. 108
Ryo Sakaba, Graduate School of Education, Ibaraki University, Japan; Takashi Usuzaka, College of education, Ibaraki University, Japan

Learning Management System Engagement Hours: An Assessment Method for Evaluating and Advancing Learning Outcomes ................................................................. 114
Joseph M Woodside, Stetson University, United States

Updating Data: Don’t Drop Me! Using the Learning Management System to Alert Students About Their Pending Drop for Non-Payment Status ................................. 119
Sue Bauer & Susan Hicks, University of Central Florida, United States

Understanding technology integration into the classroom as a systemic and socially situated initiative .................................................................................................................. 125
Maria Mama Timotheou, Open University of Cyprus, Cyprus; Sara Hennessy, University of Cambridge, United Kingdom

Reimagining the IT Relationship in Higher Education: Faculty Technology Adoption .......................................................................................................................... 139
Marieta Jansen van Vuuren, Northwest University South Africa, South Africa; Willem Van Vollenhoven, North-West University, South Africa

Faculty Preference When Creating Courses for the Online Environment ........................................ 145
Elaine Reeder, Virginia Commonwealth University, United States; Shelby Ware, LeTourneau University, United States
Active and Meaningful Learning for the Conceptualization of the TEC21 Model
Supported by Technology: A Teacher Training Proposal .................................................... 153
Myrna Lilian Álvarez Castillo, Deyra Guadalupe Charles Estrada & Hermila Gisela Loya Martínez, Tecnológico de Monterrey, Campus Monterrey, MEXICO, Mexico

Lessons learned from developing StepUp2ICT – A middle-tier open and online course for developing ICT competences of teachers and trainers in Adult Education. .......................................................................................................................... 157
Koen DePryck, Institute of Knowledge Management, Belgium; Yashtee Gowreea, Institute of Knowledge Management, Vrije Universiteit Brussel, Belgium

Faculty and Instructional Designers: What Can We Learn About Successful Collaborations from Other Professions ................................................................. 161
Kim Glover, University of Kansas, United States

In Search of Cuban's Password: Faculty Initiative for Technology Development .......................................................................................................................... 167
Glen Gumess, University of St. Francis, United States

Designing Effective Courses Online (DECO) - A Intro Course for Effective Pedagogy in Online Courses for College Faculty ................................................................. 175
Ryan Keller, University of South Alabama, United States

Leading Change for Effective Faculty Development Programming ................................ 181
Christine Kroll, Daniel Kelly & Christopher Rates, University at Buffalo, United States

A Room Full of Shiny Objects: Technology Showcase as Faculty Development .......................................................... 188
Timothy Luckritz Marquis & Elaine Reeder, Virginia Commonwealth University, United States

The Contribution of Teachers' Use of Educational Dashboards to Professional Growth .......................................................... 192
Shiran Michaeli, Dror Kroparo & Arnon Hershkovitz, Tel Aviv University, Israel

Lean On Me: Developing a Virtual PLC for Associate Faculty .......................................... 202
Kelly Olson Stewart & Alan Belcher, Ashford University, College of Education, United States

Implementing Learning Technologies in Schools: The Role of Organizational Development and Change Management ................................................................. 208
Nelson Orta, University of North Texas - PhD Candidate, United States
Teaching and Learning Institute: Best Practices for New and Seasoned Faculty

Valerie Rutledge, University of Tennessee at Chattanooga, United States; Elizabeth Crawford, The University of Tennessee at Chattanooga, United States

Professional Development and Support for Online Faculty: Challenges and Opportunities

Jennifer L. Scott, Christina Churchill, Mellissa Sanchez & Monica Surrency, University of North Texas, United States

Networked and Self-Directed Approaches to Professional Development in Online Teaching and Design

Peggy Semingson, University of Texas at Arlington, United States; Kathryn Pole, The University of Texas at Arlington, United States


Anita Vyas, College of Nursing, University of Houston, Texas, United States

Compliance with New State Requirements for Professional Education Program Approval Implementing In-person Site-based Management into Completely Asynchronous Courses For Practimums, Field Studies, and Internships

Annette R Hux, Jackie McBride, Joan Henley, Mary Jane Bradley & Alicia Shaw, Arkansas State University, United States

P-MAX ONLINE: An Open-Source, Case Study-Based Online Mentor Training Program for Higher Education

Karen N. Nichols & Tiera S. Coston, Xavier University of Louisiana, United States

Curriculum Mapping: Program Outcomes, Course Learning Outcomes, Alignment, and Assessment

Elizabeth Crawford, University of Tennessee at Chattanooga, United States

Cloud Computing in Saudi Arabia

Hind Alghanmi, Hind Alghanmi, United States

Adjusting the Focus: Using Interactive Notebooks to Dial Up Engagement in Preservice Teacher Field Placement Hours

Shawna Bu Shell & Kerri Mulqueen, Manhattan College, United States

Not as easy as ICT: A case study about the roles of the teacher mentor

Leanne Compton & Kathy Jordan, RMIT University, Australia
Systems Thinking in Makerspace Design ................................................................. 266
LeaAnne Daughrity, Frances Mahaffey & Widad Kinard, The University of North Texas, United States

Implications of Technological Instructional Practices for English as a Second Language Vocabulary Learning ................................................................. 272
Moe Greene & William Jones, Virginia Commonwealth University, United States, United States

Creating Effective Physical Learning Spaces in the Digital Age – Results of a Student-Centered Design Thinking Workshop ................................................................. 284
Thilo Harth, Muenster University of Applied Sciences, Germany; Stefanie Panke, University of North Carolina at Chapel Hill, United States

TPACK and Educational Interactions – Pillars of Successful Technology Integration .......................................................................................................................... 295
Eloho Ifinedo & Jenni Rikala, University of Jyvaskyla, Finland

On-line learning: Why is it a source of stress for some post-secondary students? ........................................................................................................................... 306
Jennifer Laffier, Ontario Tech University, Faculty of Education, Canada

Preparation in Selecting Technology in Math Classrooms ........................................... 316
Brittany Lankford, University of North Texas, United States

Supporting Teachers in Technology Integration: Veteran teachers' reactions to technology ......................................................................................................................... 323
Caroline Morales, Bryan Station High School, United States

Creating an Effective e-Learning Culture: The Pedagogical Variation Model (PVM) for Online Learning and Teaching. ................................................................................................................................. 337
Maria Susy Rogers, University of South Wales, Faculty of Creative Industries, United Kingdom

Using Triad Video Review to Engage Online Graduate Students and Improve Teaching ............................................................................................................................. 348
Wanda Routier, Concordia University Wisconsin, United States

Moving Beyond Online Text: Fostering Visual and Multimodal Discussions through Digital Artifact Creation ......................................................................................................................... 352
Peggy Semingson, University of Texas at Arlington, United States
Perceptions of Technology Integration Skills Among Pre-Service Teachers in an Inclusive Classroom Setting ................................................................. 356
Clinton Smith, University of TN Martin, United States; Michael Spaulding, UTM Educational Studies, United States; Louis Glover, Western Governors, United States

Fab Lab Implementation: Gaining STEAM in K-12 Education .............................................. 362
Penny Westfaul, Jackson County School District, United States

STEAM Building through Professional Learning ........................................................................... 367
Penny Westfaul, Jackson County School District, United States; Mary Rodgers, William Carey University, United States

The Analysis of Pre-Service Teachers’ Software Education Teaching Efficacy in South Korea ........................................................................................................ 374
Soyul Yi & YoungJun Lee, Dept. of Computer Education, Korea National University of Education, Korea (South)

Programming Education in Primary School Focusing on Programming Thinking ~ Design of Questionnaire for Learning Effect Measurement ~ ..................................... 384
Hiroo Hirose & Takeshi Ozaki, Suwa University of Science, Japan; Kurumi Kawate, Nagano Olympus Co., Ltd., Japan

Assessing Computational Thinking and Programming Skills: Preliminary study of fourth-grade students ................................................................. 391
Greg Lee & Pei-Chun Chen, National Taiwan Normal University, Taiwan

Developing Engaging Academic Program Review Virtual Experiences ..................................... 396
Chelsea Overholt & Kelly Torres, The Chicago School of Professional Psychology, United States

Development of Virtualization Educational Program for Employees to Meet the Era of the Fourth Industrial Revolution ............................................................. 400
Takuro Ozaki, Osaka Kyoiku University, Japan; Toru Ochi, Osaka Institute of Technology, Japan; Hiroyuki Dekihara, Hiroshima Shudo University, Japan; Ryuji Miyazaki, Hiroshima International University, Japan

Does the Impact of Technology on Literacy Persist? ................................................................. 406
Haya Shamir, Kathryn Feehan, Erik Yoder & David Pocklington, Waterford Institute, United States

Strategies of Sustaining a Successful Grant Program ............................................................... 412
Yachi Wanyan, Texas Southern University, United States; Youmei Liu, University of Houston, United States

E-GOALS criteria for Online Oral Presentations ................................................................. 417
James Lipuma & Cristo Leon, New Jersey Institute of Technology, United States

ADDIE vs. SDLC: A Comparison .......................................................................................... 427
Rick Woods, University of North Texas, United States
A Tool for Evaluating Youth Engagement in an Informal STEM Setting: The WGG Observation Protocol .............................................................. 443
Caterina Almendral, Education & Language Acquisition Dept., City University of New York, LaGuardia Community College, United States; Bernadette Uzzi, Office of Educational Programs, Brookhaven National Laboratory, United States; M. David Burghardt, Engineering Department, Hofstra University, United States; Deborah Hecht, Center for Advanced Study in Education, City University of New York, The Graduate Center, United States

Learn to Learn: Formative Assessment of Online Course Quality and Student Higher-Order Learning .......................................................................................................................... 452
Timothy Luckritz Marquis, Brianne Jackson & James Fowlkes, Virginia Commonwealth University, United States

Security and privacy issues and concerns about the use of social networking services .................................................................................................................. 457
Pekka Makkonen, Centria University of Applied Sciences, Finland; Georgios Lampropoulos, International Hellenic University, Greece; Kerstin Siakas, International Hellenic University & University of Vaasa, Greece

Group Formation in Computer Supported Collaborative Learning Environments: A Systematic Review .................................................................................................................. 467
Meranda Roy, Keri Phillips Christensen & Charles Johnson, University of North Texas, United States

Argument about The Role of Pure Theory Versus Pragmatic in Education ............................................. 474
Reem Ali Almazyad, University of North Texas, United States

Learning Analytics in Higher Education: a framework proposal .......................................................... 477
Leonardo Caporarello, Bocconi University, and SDA Bocconi School of Management, Italy; Federica Cirulli & Manuela Milani, Bocconi University, Italy

Development of an Evaluation Platform of Learner Engagement: A Measurement of Eye Movement with Conventional Pulsewave and Brainwave ............................................. 484
Mitsuki Fujimoto, Ryoya Hayashi & Tetsuya Sato, Kobe City College of Technology, Japan

Learning Analytics: Tools and Possibilities .......................................................................................... 490
Leonardo Gonzalez & Christina Churchill, University of North Texas, United States

A Quantitative Study on Learner Engagement Evaluation: Integrated Analysis of Biosignals Including Pulse Wave and Eye Movements .......................................................... 496
Ryoya Hayashi, Mitsuki Fujimoto & Tetsuya Sato, Kobe City College of Technology, Japan

Utilizing Learning Analytics in Measuring Students’ Learning Outcomes: Re-examining an Online Course Grounded in the Cognitive-Affective Theory of Learning with Media (CATLM) .......................................................................................................................... 502
Mohamed Ibrahim & Rebecca Callaway, Arkansas Tech University, United States; Yasemin Gulbahar, Ankara University, Turkey
The Influence of Positive and Negative Prompting on Persistence ........................................ 513
Matthew Bonhamgregory, Alexa Cevallos & Leonardo Gonzalez, University of North Texas, United States

Three quality attributes - availability, performance and security - of social media services used in higher education: A cross-cultural analysis with IS/ICT students .......................................................................................................................... 520
Pekka Makkonen, Centria University of Applied Sciences, Finland; Georgios Lampropoulos, International Hellenic University, Greece; Kerstin Siakas, International Hellenic University & University of Vaasa, Greece

Measuring the Learning Success in Spaced-Repetition-Based Mobile Learning-Games: Suitable Techniques and Hurdles .......................................................... 528
Florian Schimanke & Robert Mertens, HSW - University of Applied Sciences, Germany

Design and Development of a New Online Course on Culture, Media, and Technology .......................................................... 538
Kevin Oliver, North Carolina State University, United States

Broadening Blended Learning Via XR: A Case for Another Modality ......................... 544
Sue Bauer, Rohan Jowallah, Glenda Gunter & Linda Futch, University of Central Florida, United States

A Graduate School Residency in a Virtual Reality Setting ........................................... 548
Scott Dolphin & Eileen O'Connor, SUNY - Empire State College, United States

Developing, Designing, and Implementing Extended Reality within Learning Environments: A Reflection and Ethical Considerations for Implementation .................................................................................................................. 553
Rohan Jowallah, The University of the West Indies Open Campus, Jamaica, Jamaica; Sue Bauer & Linda Futch, Center for Distributed Learning, University of Central Florida, United States; Glenda Gunter, The Journal of Formative Design in Learning (JFDL), United States

Augmented Reality in Early Learning: Experiences of K-3 Teachers with Merge Cubes ................................................................................................................................. 557
Esther Ntuli, Idaho State University, United States

Virtual Reality in the Classroom: Applications of Google Cardboard VR to Enhance Learning. .......................................................... 561
James Oigara, Canisius College, United States

Virtual Reality: Offering Virtually Unlimited Application ................................................. 567
Margaret Rice, Vivian Wright, Juanita McMath, Laura McNeill & Michelle Wilson, The University of Alabama, United States
Rote memorization in VR environments ................................................................. 572
Anne-Dominique Salamin, University of Applied Sciences western Switzerland, Switzerland (HES-SO), Switzerland

Relationships between Cognitive Loads and Motivational Support in a Virtual Reality Game-Based Learning System for Teaching Introductory Archaeology ....................... 583
Laura Shackelford & Wenhao David Huang, University of Illinois at Urbana-Champaign, United States; Alan Craig, National Center for Supercomputing Applications, United States; Cameron Merrill, Danying Chen, Xuehui Chao & Jamie Arjona, University of Illinois at Urbana-Champaign, United States

Integrative Learning: A General Education Course on the Art and Science of Virtual Worlds ............................................................................................................. 589
Jeffrey Stone, D.K. Jackson & Michelle Kaschak, Pennsylvania State University, United States

Leveraging Flipgrid to Transform Student Engagement & Promote Active Learning in Blended Environments ................................................................. 602
Elizabeth Welch, Seton Hall University, United States

Analyzing the Effects of a Culturally Relevant Augmented Reality Math Board Game on Lakota Students’ Arithmetic Performances: A Case Study ........................................ 606
Jiaqi Yu & Andre Denham, The University of Alabama, United States

Negotiating a Co-Taught Interdisciplinary STEM Education Class in an Online Environment ................................................................................................................ 611
Stacey Britton & Rebecca Gault, University of West Georgia, United States

An Open Discussion about Clinical Internships for Educational Leadership Programs in an Online Learning Environment ........................................................................ 616
Jackie McBride, Annette Hux, Joan Henley, Mary Jane Bradley & Alicia Shaw, Arkansas State University, United States

Adapting teaching and learning to skills of the future .............................................. 621
Nuno Domingues, ISEL, Portugal

Beyond the Foundations: Improving Higher-Order Understanding Through Foundational Knowledge ........................................................................................................... 628
Iain Harlow, Cerego, United States; Lane Fischer, Brigham Young University, United States; Liang Wang, University of Hawai‘i at Manoa, United States

Empathy through the visualization of emotions: Story of a Toltec prince .............. 634
Ana Lilia Laureano-Cruces, Universidad Autónoma Metropolitana-Azcapotzalco, Mexico; Rebeca Serrano-Muñoz, Posgrado en Diseño y Visualización de la Información UAM-Azcapotzalco, Mexico; Abraham Stephen Castillo-Bernal, Museo Nacional de Antropología-INAH, Mexico; Lourdes Sanchez-Guerrero & Javier Ramírez-Rodríguez, Universidad Autónoma Metropolitana-Azcapotzalco, Mexico
Can Using A Multimedia-Enriched Problem-Based Learning Environment Improve At-Risk Students’ Attitude? ................................................................. 644
Min Liu, The University of Texas at Austin, United States; Sa Liu, Harrisburg University of Science and Technology, United States; Zilong Pan, Wenting Zou & Chenglu Li, The University of Texas at Austin, United States

Developing Long-Term Authentic Inquiry Experiences: Data integration in the 9-12 classroom ........................................................................................................................... 650
Caroline Morales, Bryan Station High School, United States

Google Docs in Gifted Education – A Lit Review and Proposal for Study ............... 656
Widad Kinard, University of North Texas, United States; Frances Dendy Mahaffey, University North Texas, United States; LeaAnne Daughtry, University of North Texas, United States

Tipping the balance towards 21st century skills through peer-to-peer learning: A cross-disciplinary pilot of peer review software ................................................................. 662
John McCormick, Liv Cummins & Lisa Spitz, Lesley University, United States

The Impact of Virtual Immersion in the E-Learning Environment ......................... 668
Elizabeth McMaster, Thomas Moore, Dawn Onstott, Ausha Weathers & Amy Herrington, University of St. Augustine for Health Sciences, United States

Pair Programming in Elementary Classroom: How does Collaborative Learning Benefit Students? ................................................................. 673
Nanxi Meng & Lin Lin, University of North Texas, United States; Xuefeng Wei, Ludong University, China

Tools and Toys for Using Retrieval Practice to Promote Classification Learning ................................................................. 678
Prabhakara Reddy, North Dakota State University, United States; Otto Borchert, Missouri Southern State University, United States; Brian Slator, North Dakota State University, United States

Teaching or Cheating? Using Collaboration and Technology to Support Student Learning ................................................................................................. 685
Alicia Shaw, Arkansas State University, United States

Development of a Method and Application to Enhance Seminar-based Learning by Helping Learners Appropriate their Instructor’s Words and to Use them as Cognitive Artifacts ................................................................. 692
Hideyuki Suzuki, Ibaraki University, Japan; Hideo Funaoi, Soka University, Japan; Yoshihiko Kubota, Tamagawa University, Japan
Designing an Educational Game for Teaching Foundational Concepts in Propositional Logic
Daniel Aranda, Alden Towler, Ramyaa Ramyaa & Rita Kuo, Department of Computer Science and Engineering, New Mexico Institute of Mining and Technology, United States

Interactive Learning about Reformation in Torgau at a Gesture-Controlled Large Display
Gudrun Goerlitz, Beuth University of Applied Sciences Department of Computer Sciences and Media, Germany

Interdisciplinary Game Design Process in Anonymous Communications
Karla Hamlen, Xiongyi Liu, Ye Zhu & Haodong Wang, Cleveland State University, United States

Minecraft: Fostering STEM in the Virtual Sandbox
David Hooks, San Angelo ISD, United States; Audrey Heron, Angelo State University, United States

Digital Games for Second Language Acquisition: A Systematic Review
Tzuhuang Huang, National Tainan University, Taiwan; Hsiu-Ting Hung, National Kaohsiung University of Science and Technology, Taiwan; Hui-Chun Chu, Soochow University, Taiwan

Using Game-based Educational Rewards and Social Networks to Encourage Students’ Academic Success
Donovan Jenkins, Department of Computer Science and Engineering, New Mexico Institute of Mining and Technology, United States; Eric Cheng, School of Computer and Information Systems, Athabasca University, Canada; Rita Kuo & Jun Zheng, Department of Computer Science and Engineering, New Mexico Institute of Mining and Technology, United States; Maiga Chang, School of Computer and Information Systems, Athabasca University, Canada

The Corporate Playground: A Review on Game-Based Learning in Enterprise Training
Kristi Larson, University of North Texas, United States

Game-based Learning: Concept and Practical Examples
Ilknur Oded, California State University Monterey Bay, United States; Yaniv Oded, Indiana University, United States

Pick 5: transforming a paper-based group learning activity into an online gaming experience
Matthew Osment, The University of North Carolina at Chapel Hill, United States; Micah Anderson, UNC-CH, United States; Mark Chandler, Duke University School of Medicine, United States; Eric Zwemer, Hannah Coletti & Christian Lawrence, UNC School of Medicine, United States

Smartphones and EFL Learning Beyond the Classroom in Japan
Adam Christopher, Monash University, Japan
Understanding Design Science Research through Project-based Learning: a Mobile App for e-Government .............................................................. 770
Esrone de Jager & JT Janse van Rensburg, North-West University, South Africa

Workflow Learning and Learner-Centered Design Ecosystem: The Clalit Healthcare Approach ................................................................. 778
Tamir Givati, Clalit Health Service, Israel; Tzipi Burger, Clalit Health Services, Israel

A Pilot Study for the Effectiveness of Self-Regulated Learning Scaffolds on Cognitive Learning Achievement .............................................. 789
Seoyeon Park & Chenxuan He, Texas A&M University, United States

Serving Those on the Autism Spectrum at the Library: Virtually ......................... 794
Paul Wyss, Minnesota State University Mankato, United States

Ready, Set, Action: Using Video Announcements to Improve Faculty-Student Connections in Online Learning ............................................. 798
Gwendolyn Miller & Aimee Vael, Columbus State University Columbus, Georgia, United States; Tamara Condrey, Columbus State University, United States

Impact of Technology Enhanced Informal Learning on Formal Learning in Primary Education in Sri Lanka ....................................................... 803
Kaleelur Rahuman Mohamed Aliyar, University of Colombo School of Computing, Sri Lanka; Abdul Haleem Sulaima Lebbe, Department of Information & Communication Technology, South Eastern University of Sri Lanka, Sri Lanka; K Priyantha Hewagamage, University of Colombo School of Computing, Sri Lanka

Bridges across contexts – developing an animated Story World for Early Childhood transitions ............................................................... 812
Lisa Gjedde, Aalborg University, Denmark

Effect of multimodal lessons on students’ learning ........................................... 817
Sandra Velazquez, University of North Texas, United States

Flipping the Flipped Classroom: Length of Video, Teaching Style & The Engaging Professor: A Case Study ............................................. 823
Fatimah Wirth, Georgia Institute of Technology, United States

Investigating Human-Centered Learning Management Systems: A Critical Review ............................................................... 833
Eric Zhewen Li & Wei-Fan Chen, The Pennsylvania State University, United States
Considering the Impact of Self-regulation and Digital Literacy on Preservice Teachers’ Attitudes toward Web 2.0 Personal Learning Environment (PLEs) ........................................... 838
Jieun Lim, Daegu National University of Education, Korea (South)

Illmatics: A Web-based Math Word Problem Generator for Students’ Distal and Proximal Interests ......................................................................................................................... 842
DeKita G. Moon-Rembert & Juan E. Gilbert, University of Florida, United States

Personalized Learning in Co-Taught Classrooms: The role of technology in the education of unique learners .................................................................................................................. 849
Caroline Morales, Bryan Station High School, United States; Allison Parks, STEAM Academy, United States

Model of Student’s Thinking Style Profiles in the Teaching-Learning Process of an Interface ................................................................................................................................. 854
Lourdes Sanchez-Guerrero, Martha Mora-Torres, Ana Lilia Laureano-Cruces & Javier Ramirez-Rodriguez, Universidad Autonoma Metropolitana-Azcapotzalco, Mexico

Improving Math Skills Using Technology ................................................................................................................. 864
Haya Shamir, Erik Yoder, David Pocklington & Kathryn Feehan, Waterford Institute, United States

Effects of Using an Interactive Applet on Students’ Learning of Trigonometric Functions .......................................................................................................................... 870
Mustafa Demir, University of Detroit Mercy, United States

Visual Information Effects and Conversational Agents: Less is More ................................................................. 876
Bob Heller & Mike Procter, Athabasca University, Canada

The Player-Role Nexus and Student Engagement in Higher Education Online Role Play Simulation Games ................................................................................................................................. 882
Roni Linser, Fablusi, Australia

RosterHub: Open-Source Roster Management System for Interoperability of Educational Systems .............................................................. 891
Koichi Yoshizaki & Junmi Nakashima, Oita University, Japan

Technology-enabled Learning MOOC: Designing more Interactive MOOCs using the iMOOC Model ....................................................................................................................... 897
Nathaniel Ostashewski, Martha Cleveland-Innes & Dan Wilton, Athabasca University, Canada
Digital Citizenship meets Open Educational Resources: Local Government Open Textbook Project ................................................................. 901
Stefanie Panke, University of North Carolina at Chapel Hill, United States; Rick Morse, School of Government UNC Chapel Hill, United States; Spencer Stone, Kenan Flagler Business School, United States

Connecting Critical Reading, Critical Thinking and Scholarly Writing through Innovative, Connected, Open Source Materials ............................................................. 913
Robin Lukes, St. Catherine University, United States

Providing an evidence base for mobile assistive technology: The importance of meta-analysis of single subject design studies ................................................................. 918
Therese Cumming, University of New South Wales, Australia

Curate or Create: An Examination of a Legal Issue Involved in the Curation of Existing Training Content. .............................................................................................................. 924
Christine Boring, Robert Morris University, United States

E-Ducational Philosophy: Who’s afraid of falling off a flat E-Arth? ......................... 931
Koen DePryck, Institute of Knowledge Management, Belgium

Augmented Reality Distributed Play for Ageless Connections ................................. 935
Helene Fournier, National Research Council Canada, Canada; Noor Ali, University of New-Brunswick, Canada

Virtual Learning Through Hofstede’s Individualism and Collectivism Cultural Dimension: An International Student’s Perspective ...................................................... 942
Shreyashi Halder, University of Texas, San Antonio, United States

Is Public Video Surveillance a Right of Government? ............................................. 949
Lauren Menard, Grand Canyon Univeristy, United States

Cybersecurity: Phishing Attack Mitigation and Prevention for Higher Education ............................................................................................................................. 955
Brian Reese & Wei-Fan Chen, The Pennsylvania State University, United States

A conceptual framework for the inclusion of ethical variations in an internationalized e-learning curriculum ................................................................................................. 960
Klaus Schmidt & Ernest Arko, Illinois State University, United States

Space Science Activities to Enhance Middle School Students’ Interest in STEM: Follow-up Assessment of Disposition Retention ......................................................... 971
Gerald August Knezek, University of North Texas, United States; Rhonda Christensen, Institute for the Integration of Technology into Teaching and Learning, United States
Historical Invention Kits: A Comparison of the Achievement Gains of High Performing and Low Performing 7th Grade Students in Rural Texas ......................................................... 981
Tandra Tyler-Wood, University of North Texas, United States

X-literacies: beyond digital literacy ................................................................................. 989
Jon Dron, Athabasca University, Canada

Persistence and Achievement in Acquiring Computational Thinking Concepts: A Large-Scale Log-Based Analysis ............................................................................................. 1002
Rotem Israel-Fishelson & Arnon Hershkovitz, Tel Aviv University, Israel

Computational Thinking and Programming for Non-CS Majors ................................. 1013
Greg Lee & En-Hsuan Lee, National Taiwan Normal University, Taiwan

Computational Skills for the Twenty-First Century: case ANIEI Mexico ................. 1019
Lourdes Sanchez-Guerrero, Universidad Autonoma Metropolitana-Azcapotzalco/ANIEI, Mexico; Nancy Aguas-Garcia, Universidad del Caribe, Mexico; Mariem Henaine-Abed & Ana Lilia Laureano-Cruces, Universidad Autonoma Metropolitana-Azcapotzalco, Mexico; José Raymundo Lira-Cortés, Universidad Autónoma Metropolitana-Azcapotzalco, Mexico

Exploring the Promise of Multimedia to Expand Educators’ Perceived Efficacy at Engaging Learners and Enriching Student Achievement .............................................. 1026
Katie Alaniz, Houston Baptist University/River Oaks Baptist School, United States; Dawn Wilson, Houston Baptist University, United States

Building 21st Century Skills among Elementary Schools Students – The LiFE Project ............................................................................................................................................. 1031
Bruce Bukiet & James Lipuma, New Jersey Institute of Technology, United States

Using Bloom’s Taxonomy to Support Data Visualization Capacity Skills .................... 1039
Vetria Byrd, Purdue University, United States

Reflective practice in project-based learning: IT graduate perceptions on mobile development for a community project .................................................................................. 1054
Zuleïka de Klerk & JT Janse van Rensburg, North-West University, South Africa

Content Analysis of Higher Education Instructional Design Job Postings: Required and Preferred Qualifications ........................................................................................................... 1060
Monica Surrency, University of North Texas, United States; Christina Churchill, University of North Texas (PhD Student) and Southern Methodist University (Staff), United States; Mellissa Sanchez & Jennifer Scott, University of North Texas, United States
Spontaneous Interactions and Distributed Teacher Presence by Teacher Candidates in a Social Learning Environment ................................................................. 1075
Gerald Ardito, Pace University School of Education, United States

Teaching and Learning Curriculum Transformation Framework in ODeL environment ..................................................................................................................... 1083
Maria Madiope, University Of South Africa, South Africa

Collaborative Gaming as an Agent of Motivation to Increase Retention in Online Learning ........................................................................................................................... 1095
Emily Baumgartner, Enrico Gandolfi & Richard Ferdig, Kent State University, United States

Learning through Asynchronous Discourse: An Interdisciplinary Perspective on Intersubjectivity ............................................................................................................................. 1100
Barbara Hall, Northcentral University, United States

College students’ experiences of using RISE Model for structuring peer-feedback in discussion forums. ................................................................................................................................. 1104
Shu-Yuan Lin & Daphne ChingYu Tseng, Idaho State U., United States

Usability/desirability testing of a gamified eLearning prototype for developing reflective skills ................................................................................................................................. 1111
Sara Tarif Aly Abdelmawgoud, UNSW, Australia, Australia

Teaching Differentiated Instruction through E-Learning .......................................................... 1118
Miriam Abety & Annette Zayas, Miami Dade College, United States

Warriors with Invisible Wounds: Moving Toward Informal eLearning for Their Caregivers ................................................................................................................................. 1122
Precious Goodson & Barbara Hall, Northcentral University, United States

Digital Tools for Mathematics Composition: Building an Online Mathematics Course ................................................................................................................................. 1126
Shayla Heavner & Christopher Devers, Johns Hopkins University, United States

The Digital Tutor: A Concept, A Passion, A Reality ........................................................... 1132
Adil Khan, Jennie Larry Johnson & Courtney De La Cruz, University of North Texas, United States

Engaging Learning in Online Learning ................................................................................................. 1139
Kim Livengood & Dara Anderson, Angelo State University, United States
Deterring Plagiarism through a Two-Step Educational Tutorial and Self-Feedback Tool in an Online Program

Ruqqayya Maudoodi & Richard Metzger, Rutgers University, United States

Incorporating a State-of-the-Art Speech Recognition to a Japanese Language e-Learning System

Hajime Mochizuki & Kohji Shibano, Tokyo University of Foreign Studies, Japan

Online Instructor Voices: A Qualitative Study on Perceptions of Practice

Cynthia Sistek-Chandler, National University, United States; Michael Myers, National University, Private Non-Profit University Sanford College of Education, United States

The Meaning of Quality in Online/Blended Learning at a Malaysian University

Esther Smidt, West Chester University, United States; Cecilia Yin Mei Cheong, University of Malaya, Malaysia; Timothy Kochem, Iowa State University, United States

E-learning in rural China: Perspectives from online instructors and local teachers in rural elementary schools

Chaoran Wang, Indiana University Bloomington, United States

Factors Influencing Students’ Online Learning Readiness in a Middle Eastern Higher Education Institution: Implications for Online Course Design

Ghania Zgheib, Roula AlDaia, Mireille Serhan & Antoine Melki, University of Balamand, Lebanon

Coffee and Chat Session: Meeting the Needs of Nontraditional ABSN Students

Brooke Lakin, University of Alabama EdD Program, University of Tennessee Clinical Assistant Professor, United States; Vivian Wright, University of Alabama, Professor of Instructional Technology, United States; Margaret Rice, University of Alabama, Associate Professor, Educational Leadership, Policy and Technology Studies, United States

Implementing Best Practices for Preparing College Faculty to Teach Online, A Discipline Specific Model

Amy Goodman, Baylor University, United States

Higher Education Redesigned: Exploring Key Challenges of Personnel Working to Innovate and Expand the Reach of Lifelong Learning Opportunities

Annie Hale, Leanna Archambault & Lukas Wenrick, Arizona State University at the Tempe Campus, United States

Transformed Mentorship: Aligning an Online Co-Teaching Opportunity with a Departmental Conceptual Framework

Judi Roux & Annette Miller, The College of St. Scholastica, United States
Cohesive Integration of E-Learning in Nursing Leadership Reality ........................................ 1230
Amanda Savage, Jessica Jose & Amy Herrington, University of St. Augustine for Health Sciences, United States

The Design, Evolution, and Implementation of a Keeping in School Shape (KiSS) Program .............................. 1235
Carla van de Sande, Arizona State University, United States

A surprising navigation: The emergence of the LODEStone model through OCTBR, a Creative Commons-licensed course development tool for the health sciences. ........................................ 1241
Patience Wieland, University of North Texas, United States; David del Pino Kloques, University of Houston, United States

Current Trends and Best Practices of Mobile Learning in K-12 Special Education Learning Environments ................................................................. 1255
Aubrey Statti & Sonimar Villegas, The Chicago School of Professional Psychology, United States

Mobile Application Design and Development for Geoscience Learning .................................................. 1260
Fu-Shing Sun, Ball State University, United States

Community of Practice and Community of Inquiry: A Question of Practicality ........................................ 1265
Roger Antonio Chambers, University of North Texas, United States

Effective Online Course Design in a Learning Management System Has Strong Impacts on Student Learning Achievement: A Case Study at a University in Iowa .................... 1270
Dan Dao, Distance and Online Education, United States; Evans Ochola, Teaching and Learning, United States

Student Perceptions of Video-Based Discussions in Online and Blended Learning ........................................ 1280
Peggy Delmas & Pamela Moore, University of South Alabama, United States

Reaching Every Student in the Digital Age: A Showcase of UDL Strategies in a Large Online Course ................................................................. 1287
Aisha Haynes, University of South Carolina - Center for Teaching Excellence, United States

Educators Moving Forward Towards the 22nd Century ................................................................. 1293
Therese Kanai, American College of Education, United States

Case Study on the Implementation of Real-Time Video-conferencing Class to promote basic academic achievement ................................................................. 1298
Eun-joo Lee, Korean Educational Development Institute, Korea (South)
Audio, Graphics, and Text…Oh My! Improving Instructor Presence Through Effective Instructional Message Design ................................................................. 1302
Sharonda Lipscomb, University of North Texas / University of Arkansas at Little Rock, United States

Designing Discussions for Meaningful Interaction ................................................................. 1307
Kelly McKenna, Colorado State University, United States

Using Video Tools in MOODLE: The POODLL Case ......................................................... 1310
Nathaniel Ostashewski, Agnieszka Palalas, Susan Moisey & Susan Bainbridge, Athabasca University, Canada

Moving from Blackboard to Canvas: What the Research Says, Plus Two Professors’ Experiences ........................................................................................................ 1314
Kelly Paynter & Jimmy Barnes, Jacksonville State University, United States

Course Redesign and its Impact on Student Success ............................................................. 1321
Rebecca Showalter & Corneliu Chiorescu, Georgia Military College, United States

Gaining & Sustaining Learners’ Attention: A Proposed Study of Students’ Perceptions and Effect on Learning .................................................................................. 1327
Monica Surrency, Embry-Riddle Aeronautical University Worldwide, United States; Jim Solti & Felix De Brito, Embry-Riddle Aeronautical University, United States

Difficulties Of Vietnamese Learners In Producing The Final-Constant Sounds And The Solution To These Problems ................................................................. 1334
My Tran, Bac Lieu High School, Vietnam

The Role of Media in Learning and Teaching ...................................................................... 1341
Reem Ali Almazyad, University of North Texas, Saudi Arabia

Backward Design Plus: Taking the Learning Context into Consideration ...................... 1345
Chrystal Dean, Appalachian State University, United States

The Influence of Academic Discipline, Cognitive Style, and Spatial Ability on Female Students’ Learning Outcomes ................................................................. 1349
Natalie Toomey & Misook Heo, Duquesne University, United States

Virtual Reality for Career and Technical Education ......................................................... 1355
Mark Carroll, Sara Shaw & Peter Schrader, University of Nevada, Las Vegas, United States

A promise unfulfilled: Why mobile learning hasn’t improved education in Africa .......... 1364
Solen Feyissa & Senenge Andzenge, University of Minnesota, Twin Cities, United States
An Inferential Analysis between High and Low-Level Technology Adoption Users  ................................................................................................................................  1382
Mary Rodgers, William Carey University, United States

Art Enriched Mathematics Education Activities and Adaptation to Online Education  .......................................................................................................................................................... 1395
Berna Yıldızhan, Necmettin Erbakan University, Ahmet Kelesoglu Faculty of Education, Konya, Turkey; Ozlem Cezikturk, Marmara University, Dept. of Primary Mathematics Education, Turkey

Transformational geometry via Geogebra: 12 pointed star drawing by dynamic geometry  .................................................................................................................................................. 1401
Özlem Cezikturk & İlyas Yavuz, Marmara Üniversitesi, Turkey