Contents

Section I
Special Issue
Selected papers from the 2019 International STEM in Education Symposium : Innovative Vision for STEM Education and Teaching

Guest Editor
Feng-Kuang Chiang – Shanghai Normal University, Shanghai, China

Section II
Contributions in: Active Learning, Problem Solving, Identity, Hidden Curriculum, Employability, Metacognition, Motivation, PBL, Flipped Classroom, First Year, Expert vs. Novice, Simulations, Instructional Change, Capstone Design, Team Performance, Remote Laboratories, Computer Engineering, Civil Engineering, Graphics Engineering, Mechanical Engineering, Industrial Engineering, Robotics, Engineering Education Studies

Ahmad Ibrahim	1429	Editorial
Feng-Kuang Chiang	1430–1432	Guest Editorial A Review of the 2019 International STEM in Education Symposium: Innovative vision for STEM Education and Teaching
Qiuyan Yang, Liang Yu and **Xinyu Zhou**	1433–1447	Investigation of College Students' Behavioral Learning Engagement in Online Courses
Hang Hu, Yaxin Li, Yang Yang, Yifei Su and **Shuang Du**	1448–1460	The Relationship Between STEAM Instruction, Design Thinking and Deeper Learning
Liqiao Nong, Lanlan Zhang and **Geping Liu**	1461–1471	English as Second Language Curriculum from the Perspective of STEM in Chinese Engineering Undergraduates
Hong-Liang Ma, Xiao-Hong Wang, Ming Zhao, Lin Wang, Mei-Ru Wang and **Xu-Jia Li**	1472–1479	Impact of Robotic Instruction with a Novel Inquiry Framework on Primary Schools Students
Li Li, Chun-Hao Chang and **Feng-Kuang Chiang**	1480–1491	Investigating How Children Learn and Perceive Engineering Design Knowledge Through Automotive Design Practices
Victor Flores	1492–1504	Improving Students' Learning Skills for Developing a Software Project using Active Learning Techniques: Service-learning and Agile Software Development
Gianpiero Cabodi, Paolo Camurati, Paolo Pasini, Denis Patti and **Danilo Vendraminetto**	1505–1528	Schema-Based Instruction with Enumerative Combinatorics and Recursion to Develop Computer Engineering Students' Problem-Solving Skills
Angela Minichiello and **Emily Hanks**	1529–1548	Becoming Engineers in the Middle Years: Narrative Writing as Identity Work in an Undergraduate Engineering Science Course
Idalis Villanueva, Marialuisa Di Stefano, Laura Gelles, Kate Youmans and **Anne Hunt**	1549–1569	Development and Assessment of a Vignette Survey Instrument to Identify Responses due to Hidden Curriculum among Engineering Students and Faculty
Qixia Hu, Lingxia Gao, Lei Jiang, Zhen Wang and **Yunli Gao**	1570–1584	Factors Influencing Employability of Civil Engineering Graduates in China
Elif Ozturk, Bugrahan Yalvac, Michael D. Johnson and **Xiaobo Peng**	1585–1594	Investigating the Relationships Among Engineering Practitioners and Undergraduate Students' Adaptive Expertise Characteristics and Experiences
Juan Alejandro Melian-Melian and **Jorge Martin-Gutierrez**	1595–1604	Influence of Motivation on Learning Approaches of Students Using Learning Objects in Graphics Engineering
Michael Woodrow, Andrew L Gillen, Roxanne Woodrow and **José Torero**	1605–1614	Investigating Varied Pedagogical Approaches for Problem-Based Learning in a Fire Safety Engineering Course
Kaela M. Martin and Jonathan M. Gallimore	1615–1624	Comparing Student Performance in Flipped and Non-Flipped Space Mechanics Classrooms

Abigail Clark, Renee Desing, Cassondra Wallwey, Rachel Louis Kajfez, Jean Mohammadi-Aragh and **Soundouss Sassi**	1625–1639	Tracking First-Year Engineering Students' Identity Metrics
Jeremi London, Christina Lam, Jessica Borders, Logan Perry, Steven Ayer and **Wei Wu**	1640–1651	Experts' and Novices' Perspectives on the Priority of Affective Dimensions in Civil Engineering: A Mixed Methods Study
Martin Jaeger and Desmond Adair	1652–1666	Impact of Computer-Based Feedback Style on Learning Effectiveness in Simulation-Supported Courses
Renee M. Clark, Samuel Dickerson, Mostafa Bedewy, Kevin P. Chen, Ahmed Dallal, Andres Gomez, Jingtong Hu, Robert Kerestes and **Louis Luangkesorn**	1667–1680	Social-Driven Propagation of Active Learning and Associated Scholarship Activity in Engineering: A Case Study
Shun Takai and **Joe Bittorf**	1681–1690	A Study of Team Characteristics that Correlate with Team Performance in a Capstone Design Course
Igor M. Verner, Dan Cuperman, Sergei Gamer and **Alex Polishuk**	1691–1707	Exploring Affordances of Robot Manipulators in an Introductory Engineering Course
Aytac Ugur Yerden and **Nihat Akkus**	1708–1721	Virtual Reality Remote Access Laboratory for Teaching Programmable Logic Controller Topics
Yegin Genc, Gonca Altuger-Genc and **Akin Tatoglu**	1722–1735	Systematic Review of ASEE Conference Proceedings (2007–2016) with A Machine Learning Approach
	1736	Guide for Authors