

Contents

Section I

Special Issue

Maker Spaces in Engineering Education

Guest Editor

**Pao-Nan Chou – Northern Illinois University, USA & National
University of Tainan, Taiwan**

Section II

Contributions in: Transport Engineering, Global Learning, Institutional Data, Transnational Education, Academic Success, PBL, Inverted Classroom, Socialization Process, Software Testing, STEAM

Ahmad Ibrahim	1133	Editorial
Pao-Nan Chou	1134–1135	Guest Editorial: Maker Spaces in Engineering Education
Chih-chao Chung, Cheng-Lung Tsai, Yuh-Ming Cheng and Shi-Jer Lou	1136–1150	Action Research on Integrating Maker Spirit and Maker Space for the Special Topic Courses of Engineering Students in Vocational High Schools
Dámari Melián, José Luis Saorín, Jorge de la Torre Cantero and Vicente López-Chao	1151–1160	Analysis of the Factorial Structure of Graphic Creativity of Engineering Students through Digital Manufacturing Techniques
Bariş Doğan, Buket Doğan, Eyup Emre Ulku, Anil Bas and Hasan Erdal	1161–1169	The Role of the Maker Movement in Engineering Education: Student Views on Key Issues of Makerspace Environment
Hannah D. Budinoff and Sara McMains	1170–1183	Improving Outcomes and Participation in the Prototyping Process Using Design-for-Additive-Manufacturing Training
Gordon D. Hoople, Joel Alejandro Mejia, Diane Hoffoss and Satyan L. Devadoss	1184–1195	Makerspaces on the Continuum: Examining Undergraduate Student Learning in Formal and Informal Settings
Cindy Lenhart, Jana Bouwma-Gearhart, Idalis Villanueva, Kate Youmans and Louis S. Nadelson	1196–1207	Engineering Faculty Members' Perceptions of University Makerspaces: Potential Affordances for Curriculum, Instructional Practices, and Student Learning
Lei Jiang, Lingxia Gao, Qingchun Wang, Yunli Gao and Feng Shi	1208–1219	The CDIO-based Maker Space Framework: Application with Engineering Management Students
Nikolaos Kalogeropoulos, Pierre Walker, Colin Hale, Klaus Hellgardt, Andrew Macey, Umang V. Shah and Marsha P. Maraj	1220–1233	Facilitating Independent Learning: Student Perspectives on the Value of Student-Led Maker Spaces in Engineering Education
Matthew A. Wettergreen, Ann Saterbak, Amy J. Kavalewitz, Alex M. Nunez- Thompson, Veronica Leautaud, Theresa Mkandawire, Matthew Petney, Carlos A. Dos Santos and Z. Maria Oden	1234–1251	Makerspaces in Low-, Middle-, and High-Income Countries to Support Student Development of Engineering Design Skills
Mohamed Jalal and Hanan Anis	1252–1270	The Integration of a Maker Program into Engineering Design Courses
Satesh Namasivayam, Mohammad Hosseini Fouladi, Sivakumar Sivanesan and Se Yong Eh Noum	1271–1279	The Role of Makerspaces in Enhancing the Student Learning Experience
Cheng-Lung Tsai, Chih-chao Chung, Ming-Hsiu Liu and Shi-Jer Lou	1280–1294	The Effect of Positive Instruction on a Maker Project in a Vocational High School
Xaver Neumeyer and Susana C. Santos	1295–1301	Makerspaces as Learning Sites at the Intersection of Engineering and Entrepreneurship Education
E. Diez-Jimenez, C. Gomez-Huelamo, M. J. Gómez-García, and I. Valiente-Blanco	1302–1311	Practical Approach for Teaching Vehicle Design to Engineering Undergraduates
Kerry L. Meyers and Mark J. McCready	1312–1320	The Benefits of Short-Term Study Abroad Programs for Engineering Students
Marisa K. Orr, Matthew W. Ohland, Susan M. Lord and Richard A. Layton	1321–1332	Comparing the Multiple-Institution Database for Investigating Engineering Longitudinal Development with a National Dataset from the United States

Rami Ghannam, Sajjad Hussain, Qammer H. Abbasi and Muhammad Ali Imran	1333–1339	Remote Supervision of Engineering Undergraduates in a Transnational Programme between Scotland and China
Kyle M. Whitcomb, Z. Yasemin Kalender, Timothy J. Nokes-Malach, Christian D. Schunn and Chandralekha Singh	1340–1355	Engineering Students' Performance in Foundational Courses as a Predictor of Future Academic Success
Xiangyun Du, Claus M. Spliid, Anette Kolmos, Niels E. R. Lyngdorf and Youjin Ruan	1356–1371	Development of Critical Reflection for Transformative Learning of Engineering Educators in a PBL-Based Professional Learning Program
Blerta Prevalla Etemi and Huseyin Uzunboyulu	1372–1382	The Effects of Flipped Learning Method on Students' Perception and Learning of Java Programming
Emma Brennan-Wydra, Joanna M. Millunchick, Trevion S. Henderson, Aaron W. Johnson and Cynthia Finelli	1383–1395	Investigating the Adaptation of Socialization Processes Scales in Engineering Education Context
Tonči Dadić, Vlado Glavinić and Marko Rosić	1396–1410	Automated Software Testing Based on Semantic Distance
Swapnil Sinha, Kelsey Rieger, Aaron D. Knochel and Nicholas A. Meisel	1411–1427	The Impact of a Mobile 3D Printing and Making Platform on Student Awareness and Engagement
	1428	Guide for Authors