Contents


Ahmad Ibrahim 1567 Editorial
Rejhan Nišić, Edis Mekić and Emir Pecanin 1584–1593 Constructive Development of Physical Laboratory Exercises Without Manual as an Attitude Changing Approach
Feng-Kuang Chiang, Liyan Wang, Jingjing Zhang, Xiaomei Yan, Yehong Yang and Li Chen 1594–1604 Mapping STEM Education from 25 Years of NSF-Funded Projects
Valeriy Likhololetov and Sergei Alukov 1605–1617 Problems in Engineering Education, Engineering and Invention
Yasemin Tekmen-Aracı and Blair Kuys 1618–1629 The Impact of Excessive Focus on Performance During Engineering Design Process on Creativity
Maria Assumpció Rafart, Andrea Bikfalvi, Josep Soler and Jordi Poch 1630–1641 Impact of Using Automatic E-Learning Correctors on Teaching Business Subjects to Engineers
Catherine T. Amelink, Kirsten A. Davis and Bevlee Watford 1642–1655 Learning Experiences that Facilitate Innovation and Workforce Preparation: Exploring the Impact of In-Class and Extracurricular Activities
Teresa Redomero, Valeria Caggiano, Jose-Luis Poza-Lujan and Vincenzo Antonio Piccione 1656–1666 Fostering and Assessing Soft Skills of Engineering Students
Paul Bazelais, David John Lenay and Tenzin Doleck 1667–1672 The Effects of Testing on Academic Outcomes of College Students in an Electricity and Magnetism Course
L. Moreno-Ruíz, D. Castellanos-Nieves, B. Popescu Braileanu, E. J. González-González, José Luis Sánchez-De La Rosa, C. L. O. Groenwald and C. S. González-González 1673–1683 Combining Flipped Classroom, Project-Based Learning, and Formative Assessment Strategies in Engineering Studies
Shun Takai and Marcos Esterman 1684–1697 A Review of Team Effectiveness Models and Possible Instruments for Measuring Design-Team Inputs, Processes, and Outputs
Josh Tenenberg 1703–1724 Factors Affecting Free Riding on Teams: Implications for Engineering Education
Larisa Olesova and Dazhi Yang 1725–1737 Engineering Students’ Cognitive Learning and Perceptions in a Blended Learning Course
Nick A. Stites, Edward Berger, Jennifer DeBoer and Jeffrey F. Rhoads 1738–1757 A Cluster-Based Approach to Understanding Students’ Resource-Usage Patterns in an Active, Blended, and Collaborative Learning Environment
The ASCE ExCEEd Teaching Workshop: Assessing 20 Years of Instructional Development
Sheng-Jen (“Tony”) Hsieh 1787–1802 Teaching Design Standards and Regulations on Medical Devices Through a Collaborative Project-Based Learning Approach
Dilsen Kuzucaouglu, Bilal Umut Ayhan and Onur Behzat Tokdemir 1803–1815 Development and Evaluation of Remote Virtual Teach Pendant for Industrial Robotics Education
<table>
<thead>
<tr>
<th>Authors</th>
<th>Years</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denise R. Simmons, Nathaniel J. Hunsu and Olusola O. Adesope</td>
<td>1827–1838</td>
<td>Enabling Multi-Dimensional Measurement of Student Engagement in Engineering Learning Environments</td>
</tr>
<tr>
<td>Diana Bairaktarova and David Reeping</td>
<td>1839–1850</td>
<td>Development and Psychometrics of a Freely Available Mechanical Aptitude Test</td>
</tr>
<tr>
<td>Antoni Pérez-Poch, Fermín Sánchez-Carracedo, Nuria Salán and David López</td>
<td>1851–1858</td>
<td>Cooperative Learning and Embedded Active Learning Methodologies® for Improving Students’ Motivation and Academic Results</td>
</tr>
<tr>
<td>John R. Haughey, D. Raj Raman, Joanne K. Olson and Steven A. Freeman</td>
<td>1859–1871</td>
<td>Robots, Motivation, and Academic Success</td>
</tr>
<tr>
<td>Javier Senent-Aparicio, Patricia Jimeno-Sáez, Mauricio Arias, Leonard O'Driscoll, Julio Pérez-Sánchez, Loreto León, Francisco J. Alcalá and David Pulido-Velázquez</td>
<td>1872–1880</td>
<td>Preparation of Technical Posters as a Tool to Improve Transversal Competences of Civil Engineering Studies</td>
</tr>
<tr>
<td></td>
<td>1881</td>
<td>Guide for Authors</td>
</tr>
</tbody>
</table>