Volume	20.	Number	1	. 20	122



World Transactions on Engineering and Technology Education

Editor-in-Chief Zenon J. Pudlowski World Institute for Engineering and Technology Education (WIETE) Melbourne, Australia

Melbourne 2022	

World Transactions on Engineering and Technology Education



Commonwealth Science and Technology Academy for Research (C-STAR) Chennai, India



Faculty of Architecture Cracow University of Technology Kraków, Poland



Faculty of Architecture Gdańsk University of Technology Gdańsk, Poland



Faculty of Architecture and Design Slovak University of Technology in Bratislava Bratislava, Slovakia



Faculty of Architecture Wrocław University of Science and Technology Wrocław, Poland

Published by:

World Institute for Engineering and Technology Education (WIETE) 141 The Boulevard, Ivanhoe East, Melbourne, VIC 3079, Australia

E-mail: info@wiete.com.au Internet: http://www.wiete.com.au

© 2022 WIETE

ISSN 1446-2257

Articles published in the World Transactions on Engineering and Technology Education (WTE&TE) have undergone a formal and rigorous process of peer review by international referees.

This Journal is copyright. Apart from any fair dealing for the purpose of private study, research, criticism or review as permitted under the Copyright Act, no part of this Journal may be reproduced by any process without the written permission of the publisher.

Responsibility for the contents of these articles rests upon the authors and not the publisher. Data presented and conclusions developed by the authors are for information only and are not intended for use without independent substantiating investigations on the part of the potential user.

World Transactions on Engineering and Technology Education

EDITOR-IN-CHIEF

Prof. Zenon J. Pudlowski World Institute for Engineering and Technology Education (WIETE)

141 The Boulevard, Ivanhoe East, Melbourne, VIC 3079, Australia Tel/Fax: +61 3 94994339, E-mail: zenon.pudlowski@wiete.com.au

Internet: http://www.wiete.com.au

MANAGER & ASSOCIATE

EDITOR

Dr Dianne Q. Nguyen World Institute for Engineering and Technology Education (WIETE),

Melbourne, Australia

ASSOCIATE EDITORS

Prof. Andrew Nafalski University of South Australia, Mawson Lakes, Adelaide, Australia

Prof. Derek O. Northwood University of Windsor, Windsor, Canada

Mrs Dorota I. Pudlowski World Institute for Engineering and Technology Education (WIETE),

Melbourne, Australia

A/Prof. Arthur J. Swart Central University of Technology, Bloemfontein, Free State, South Africa

Prof. Robert Špaček Slovak University of Technology in Bratislava, Bratislava, Slovakia

ADVISORY BOARD MEMBERS

A/Prof. Stanislav Avsec University of Ljubljana, Ljubljana, Slovenia

A/Prof. Kristijan Breznik International School for Social and Business Studies; College of Industrial

Engineering, Celje, Slovenia

Prof. Colin U. Chisholm

Or Luis M. Dos Santos

Glasgow Caledonian University, Glasgow, Scotland, UK

Woosong University, Daejeon, Republic of Korea

Prof. Barbara E. Gronostajska Wrocław University of Science and Technology, Wrocław, Poland

Prof. Ahmad Ibrahim Yorkville University, Toronto, Ontario, Canada

A/Prof. Ľubica Ilkovičová Slovak University of Technology in Bratislava, Bratislava, Slovakia

Gdańsk University of Technology, Gdańsk, Poland Prof. Karolina A. Krośnicka Prof. Sabina Kuc Cracow University of Technology, Kraków, Poland Prof. Viljan Mahnič University of Ljubljana, Ljubljana, Slovenia University of West Attica, Piraeus-Athens, Greece Prof. George Metaxas Prof. Lucyna Nyka Gdańsk University of Technology, Gdańsk, Poland Prof. Jakub Szczepański Gdańsk University of Technology, Gdańsk, Poland Gdańsk University of Technology, Gdańsk, Poland Prof. Antoni Taraszkiewicz Prof. Steven Thatcher Central Queensland University, Cairns, Australia

Prof. Jacek Uziak College of Management and Enterprise, Wałbrzych, Poland Prof. Algirdas V. Valiulis Vilnius *Gediminas* Technical University, Vilnius, Lithuania

Dr Aji P. Wibawa State University of Malang, Malang, Indonesia

World Transactions on Engineering and Technology Education

Contents

Z.J. Pudlowski	Editorial	5
R. Špaček, J. Legény, M. Brašeň & T. Hubinský	Architect - a fateful mission or everyday work?	ϵ
Y.C. Jaimes Acero, A.M. Suárez Castrillón & R. Bolívar León	Aspects that develop soft skills - a way for inclusion in engineering programmes	13
B. Puškár, E. Vráblová & M. Czafík	The concept of an intelligent building in architectural education	19
J. Gil-Mastalerczyk	The importance of the relationship between religion and architecture through the lens of architectural education	25
M. Serik, S. Nurgaliyeva & G. Balgozhina	Introducing robotics with computer neural network technologies to increase the interest and inventiveness of students	33
A. Woźniczka & B. Widera	Developing sustainable resilience through forecasting and backcasting in architectural education	39
C.F. Giraldo-Jiménez, I.Y. Campo- Bermúdez, M. Muñoz-Hoyos, I. Quintero-Puentes, A. Botero- Carvajal, A. Valderrama-Aguirre & J.C. Millán-Estupiñan	Dependence on mobile devices among health science university students: a cross-sectional analytical study	45
P. Chatwattana, S. Kanyawimon & M. Jaipaitoon	An interactive alumni Web site on the Cloud to enhance proactive public relations	52
N.C. Azhar & T.A. Napitupulu	Factors affecting the effectiveness of on-line learning in higher education	60
A.J. Swart & P.E. Hertzog	Access to a learning management system by full-time and part-time students reveals notable differences	66
A. Rauzana & W. Dharma	The effectiveness of on-line learning at an Indonesian university during the Covid-19 pandemic: students' perspectives	71
Index of Authors		76