

GLOBAL JOURNAL OF ENGINEERING EDUCATION

Editor-in-Chief: Zenon J. Pudlowski

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

WIETE Partners



Association of Taiwan Engineering Education and Management (ATEEM) Taipei, Taiwan



College of Engineering & Engineering Technology Northern Illinois University DeKalb, Illinois, USA



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



Polytechnic Institute of New York University New York, USA



Technological Education Institute of Piraeus Piraeus-Athens, Greece



University of Botswana Gaborone, Botswana

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

© 2014 WIETE

ISSN 1328-3154

Articles published in the *Global Journal of Engineering Education* (GJEE) have undergone a formal 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 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.

Global Journal of Engineering 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 WIETE, Melbourne, Australia

ASSOCIATE EDITORS

Dr Ian R. Dobson Monash University, Melbourne and University of Ballarat, Ballarat, Australia Ms Krystyna Wareing Independent Communications Consultant, Crawley, West Sussex, England, UK

ADVISORY BOARD MEMBERS

Prof. Hosni I. Abu-Mulaweh Indiana University-Purdue University Fort Wayne, Fort Wayne, USA

Prof. Colin U. Chisholm Glasgow Caledonian University, Glasgow, Scotland, UK

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

Prof. Adinarayana Kalanidhi Commonwealth Science and Technology Academy for Research, Chennai, India

Prof. Krzysztof Kluszczyński Silesian University of Technology, Gliwice, Poland Prof. Romanas V. Krivickas Kaunas University of Technology, Kaunas, Lithuania

A/Prof. Wojciech Kuczborski Edith Cowan University, Perth, Australia

Prof. George Metaxas Technological Education Institute of Piraeus, Piraeus-Athens, Greece

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

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

Prof. Gyula Patkó University of Miskolc, Miskolc-Egyetemváros, Hungary

Prof. Dieter Schott Hochschule Wismar - University of Technology, Business and Design, Wismar,

Germany

Prof. David W.S. Tai HungKuang University, Taichung, Taiwan Prof. Jacek Uziak University of Botswana, Gaborone, Botswana

Prof. Algirdas V. Valiulis Vilnius Gediminas Technical University, Vilnius, Lithuania

Prof. Promod Vohra Northern Illinois University, DeKalb, USA

Global Journal of Engineering Education

Contents

Z.J. Pudlowski	103	Editorial
R. Nordin, A.A.A. Bakar, W.M.D.W. Zaki, M.A. Zulkifley and A.B. Huddin	104	Relationship between direct and indirect assessment to improve the teaching and learning process for electrical engineering programmes
M.S.M. Saad and I.A. Majid	110	Employers' perceptions of important employability skills required from Malaysian engineering and information and communication technology (ICT) graduates
A.T. De León	116	Project-based learning and use of the CDIO Syllabus for geology course assessment
P-N. Chou	123	Female engineering students' learning experiences in an industrial senior high school: a preliminary study
N.M. Sharef, H. Hamdan and H. Madzin	129	Innovation-enhanced rubrics assessment for final year projects
H. Elmunsyah	136	A national education policy-based ICT model for Indonesian vocational high schools (VHS)
T.A. Sutikno	141	Cooperation between vocational high schools (VHS) and industry to increase the number of hired graduates: multi-case study on three VHSs
Index of Authors	146	