



Journal of Information Technology Education: Innovations in Practice

*An Official Publication
of the Informing Science Institute
InformingScience.org*

JITEiip.org

Volume 21, 2022

Senior Editor-in-Chief: Christopher Cheong, RMIT University (Australia)

Editor-in-Chief: Tian Luo, Old Dominion University (USA)

Kathryn MacCallum, University of Canterbury (New Zealand)

Associate Editor-in-Chief:

Jo Coldwell-Neilson, Deakin University (Australia)

Man Fung (Kelvin) LO, The University of Hong Kong (Hong Kong)

Donna Jean Satterlee, University of Maryland Eastern Shore (USA)

Anthony Scime, State University of New York College at Brockport (USA)

Managing Editor: Eli B. Cohen, Informing Science Institute (USA)

Publisher: Elizabeth C. Boyd, Informing Science Institute (USA)

Editors:

Peter Blakey, retired academic (New Zealand)

*Athanassios Jimoyiannis, University of
Peloponnese (Greece)*

*Lalitha Jonnavithula, The Open Polytechnic of New
Zealand (New Zealand)*

*Zlatko J. Kovacic, My Statistical Consultant Ltd,
(New Zealand)*

*Krassie Petrova, Auckland University of
Technology (New Zealand)*

Benson Soong, ING Group of Colleges (Singapore)

*Janice Whatley, Manchester Metropolitan
University (United Kingdom)*

*Keith A. Willoughby, Edwards School of Business
(Canada)*

Associate Editors:

*Ahmad Samed Al-Adwan, Al-Ahliyya Amman
University (Jordan)*

*Martin D Beer, Sheffield Hallam University (United
Kingdom)*

*Tharrenos Bratitsis, University of Western
Macedonia (Greece)*

*Justin Filippou, The University of Melbourne
(Australia)*

*Aaron M. Glassman, Embry-Riddle Aeronautical
University (USA)*

*Fariza Khalid, Universiti Kebangsaan Malaysia
(Malaysia)*

Dennis Kira, Concordia University (Canada)

Stamatis Papadakis, University of Crete (Greece)

Torsten Reiners, Curtin University (Australia)

The mission of the *Journal of Information Technology Education: **Innovations in Practice*** is to:

- publish cutting edge practices early, often before generalizable studies become available,
- expose the reader to a broad range of mindsets, emerging views, and unique tactics,
- provide all those who submit manuscripts for publication with useful, timely feedback by making the review process constructive,
- continue as the most authoritative journal in the field of leading edge research involving IT and education, and
- acknowledge and embrace the diversity of teaching and learning models in use around the world

JITE is listed in Applied Math and Science Education Repository (AMSER), Cabell's Directory of Publishing Opportunities in Educational Curriculum & Methods, Cabell's Directory of Publishing Opportunities in Educational Technology & Library Science, Cabell's Directory of Publishing Opportunities in Management, EBSCO, ERIC, Index of Information System Journals, InSPEC, Intute, Ulrichs.

JITE is an academically peer-reviewed open-access journal. All submissions are blind refereed by three or more peers. JITE articles are published online on the web site <http://JITEiip.org>

(CC BY-NC 4.0) The articles in this journal are licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/). When you copy and redistribute this paper in full or in part, you need to provide proper attribution to it to ensure that others can later locate this work (and to ensure that others do not accuse you of plagiarism). You may (and we encourage you to) adapt, remix, transform, and build upon the material for any non-commercial purposes. This license does not permit you to use this material for commercial purposes.

ISSN: online 2165-316X; print 2165-3151

**Published by the Informing Science Institute
131 Brookhill Ct., Santa Rosa, California USA
phone: +1-707-537-2211
<http://informingscience.org>**

JITE: Innovations in Practice

Volume 21, 2022 - Table of Contents

Implementing Team-Based Learning: Findings From a Database Class Alanah Mitchell, Amy Grace Vaughan	1-23
Using Design-Based Research to Layer Career-Like Experiences onto Software Development Courses Christine Bakke, Rena Sakai	25-60
Categorizing Well-Written Course Learning Outcomes Using Machine Learning Yessine Hadj Kacem, Safa Alshehri, Talal Qaid	61-75
Perceptions of Senior Academic Staff in Colleges of Education Regarding Integration of Technology in Online Learning Merav Hayak, Orit Avidov-Ungar	77-94
A Deep Learning Based Model to Assist Blind People in Their Navigation Nitin Kumar, Anuj Jain	95-114
Knowledge Management Applied to Learning English as a Second Language Through Asynchronous Online Instructional Videos Jonathan Bryce, Rajermani Thinakaran, Zairul Amri Zakaria	115-133
Matching Authors and Reviewers in Peer Assessment Based on Authors' Profiles Amal Alkhalifa, Marie Devlin, Mona Alkhatabi	135-153
Objective Assessment in Java Programming Language Using Rubrics Priyanka Gupta, Deepti Mehrotra	155-173