International Journal of Education and Development using Information and Communication Technology

Volume 16, Issue 1 **April 2020**

Editorial: Behavioural Intention to use Technology, ICT Leadership Education, and Use of Information Systems and Educational Software

Chief Editor:

Denise Gaspard-Richards
The University of the West Indies, Open Campus,
Trinidad and Tobago

IJEDICT Sponsoring Organizations:

The University of the West Indies, Open Campus, West Indies

Published online by:

The University of the West Indies, Open Campus, West Indies

IJEDICT url: http://ijedict.dec.uwi.edu

ISSN: 1814-0556

Editorial Team

Chief Editors:
Denise Gaspard-Richards, The University of the West Indies.
Wal Taylor, The University of the West Indies, Barbados.

Book/Media Reviews Editor:
Ed Brandon, The University of the West Indies, Barbados.

Editorial Board:
Tony Carr, University of Cape Town, South Africa
Lawrence Carrington, University of Guyana
Laura Czerniewicz, University of Cape Town, South Africa
Patrick Danaher, University of Southern Queensland, Australia
Sir John Daniel, Council for Higher Education Accreditation, USA
Peter Day, University of Brighton, UK
John Dekkers, Central Queensland University, Australia
E. Nigel Harris, The University of the West Indies, Jamaica, West Indies (Retired)
David Jones, Central Queensland University, Australia
Wanjira Kinuthia, Georgia State University, USA
Cisco Magagula, University of Swaziland, Swaziland
Hilary Perraton, Von Hugel Institute, St Edmund's College, University of Cambridge, UK
Ravinder Rena, University of the Western Cape, Cape town, South Africa
Val Samonis, Institute for New Economic Thinking, NYC, USA and Royal Roads University, Canada
Greg Shaw, Charles Darwin University, Australia
Xinghuo Yu, Royal Melbourne Institute of Technology University, Melbourne, Australia.

Review Board:
Imoro Braimah, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
Elly Broos, Netherlands Defence Academy, The Netherlands
Ugur Demiray, Anadolu University, Turkey
Robyn Henderson, University of Southern Queensland, Australia
Kathy Jackson, The Pennsylvania State University, USA
Sarah Jones, BERA, ALT, AACE, CP Squared, United Kingdom
Michail Kalogiannakis, University of Crete, Greece
Don Krug, University of British Columbia, Canada
Valerie Lopes, Seneca College of Applied Arts and Technology, Toronto, Canada
Ann MacCann, retired from Centre for Learning Innovation, NSW, Australia
Machdel Matthee, Machdel Catharina Matthee, University of Pretoria, South Africa
Veronica McGowan, Southwestern Oklahoma State University, USA
Barry Natusch, Nihon University, Tokyo, Japan
Edwin Oloo, Ministry of Education, Nairobi, Kenya
Krassie Petrova, Auckland University of Technology, New Zealand
Robert Petrulis, EPRE Consulting LLC
Fernando Ramos, University of Aveiro, Portugal
Camilius Sanga, Sokoine University of Agriculture, Tanzania
Michael Sankey, University of Southern Queensland, Australia
Julius T. Nganji, University of Ottawa, Canada
Kok Eng Tan, Universiti Sains Malaysia
John Thompson, Buffalo State College, USA
Clayton R Wright, Higher Education Adviser, Canada
Xiuwen Wu, National-Louis University, USA

Peer Review Panel:
Stephen Adu Gyamfi, Catholic University College of Ghana;

Ebenezer Afarikumah, Accra Institute of Technology, Ghana/Open University Malaysia;
Muhammad Tanveer Afzal, Allama Iqbal Open University, Islamabad, Pakistan;
Majid Al-Khataybeh, Mutah University, Jordan;
Margarida Almeida, University of Aveiro, Portugal;
C Annamalai, SEAMEO RECSAM, Penang, Malaysia;
Aslam Ansari, G B Pant University of Ag. & Tech. Uttaranchal, India;
Vasudeva Aravind, Pennsylvania, USA;
Raman Arumugam, University Utara Malaysia;
Thomas Assan, North West University, South Africa;
Crispen Bhukuvhani, Bindura University of Science Education, Zimbabwe;
Sutapa Bose, IGNOU, India;
Russell Butson, Higher Education Development Centre, Otago University, New Zealand;
Las Johansen Caluza, Leyte Normal University, Philippines;
Hong Chen, Old Dominion University, USA;
Ngoni Chipere, The University of the West Indies, Barbados;
Robert Corderoy, University of Wollongong, NSW, Australia;
John Paul Dela Rosa, Philippine Normal University, Philippines;
J. Tim Denny, UNESCO Bangkok, Thailand;
Crispen Dirwai, University of Zimbabwe, Zimbabwe;
Thato Foko, CSIR Meraka Institute, South Africa;
Bob Fox, University of Hong Kong, Hong Kong, SAR, China;
Gerald Goh, Faculty of Business, Multimedia University, Malaysia;
Malliga Govindasamy, Teacher Education Institute, Johor Bahru, Malaysia;
John Griffin, Consultant, Oklahoma, USA;
Emerson Jackson, University of Birmingham, UK;
Rozinah Jamaludin, Universiti Sains Malaysia, Malaysia;
Haijun Kang, Kansas State University, USA;
Ah Choo Koo, Multimedia University, Malaysia;
Manish Kumar, University of North Carolina at Chapel Hill, USA;
Okanlade Lawal-Adebowale, University of Agriculture, Abeokuta, Ogun State Nigeria;
Maria Cristina Paniago Lopes, Universidade Católica Dom Bosco, Brazil;
Kelvin Man-fung Lo, Hong Kong Polytechnic University, Hong Kong;
David Mathew, University of Bedfordshire, UK;
Ton Mooij, Radboud Universiteit Nijmegen, The Netherlands;
Salomé Morais, Polytechnic Institute of Viseu, Portugal;
Sourav Mukhopadhyay, University of Botswana;
Johnnie Muwanga-Zake, Cavendish University, Uganda;
Martin O'Brien, University of Wollongong, Australia;
Nwachukwu Ololube, University of Helsinki, Finland;
Stamatis Papadakis, University of Crete, Greece;
John Pima, Coventry University, UK;
Sarah Pouezevara, RTI International, USA;
Puthira Prathap, Sugarcane Breeding Institute, Indian Council of Agricultural Research, India;
Juliana Raffaghelli, Institute of Educational Technologies, National Research Council, Italy;
T Ramayah, Universiti Sains Malaysia, Malaysia;
Jayson Richardson, University of Kentucky, USA;
Kiymet Selvi, Anadolu University, Turkey;
Zaffar Ahmed Shaikh, Institute of Business Administration, Karachi, Pakistan;
Ramesh Sharma, Indira Gandhi National Open University (IGNOU), India;
Parul Sood, Chitkara College of Education for Women, Rajpura, India;
Arulchelvan Sriram, Anna University, Chennai, India;
Vance Stevens, Petroleum Institute Abu Dhabi, UAE;
Dara Tafazoli, University of Cordoba, Spain;
Troy Thomas, University of Guyana, Guyana;

Wei Keong Too, The University of Nottingham Malaysia Campus, Malaysia;
Sudhir Warier, Reliance Communications Limited, Mumbai, India;
Ang Weay, University of Sciences Malaysia (USM), Malaysia;
Adam Wong, SPEED, Hong Kong Polytechnic University, Hong Kong;
Mingli Xiao, The University of Toledo, USA;
Yume Yamaguchi, Japan;
Omariba Zachary, Egerton University, Kenya;
Pär-Ola Zander, Aalborg University, Denmark;
Inga Žilinskienė, Mykolas Romeris University, Lithuania;
Leonardo Parisi, IFRN, Rio Grande do Norte, Brazil;
Ekta Sinha, G. Saraf College, University of Mumbai, India;
Milan Kubiatko, University of Zilina, Slovakia;
Kerwin A. Livingstone, Independent Researcher, Guyana;

Copyeditor:
Denise Gaspard-Richards, The University of the West Indies, Open Campus, Trinidad and Tobago

Layout Editor and Proofreader:
Denise Gaspard-Richards, The University of the West Indies, Open Campus, Trinidad and Tobago

Technical Support:
Reeve Ramharry, The University of the West Indies, Trinidad & Tobago, West Indies.

Open Access Policy
This journal provides open access to all of its content on the principle that making research freely available to the public supports a greater global exchange of knowledge. Such access is associated with increased readership and increased citation of an author's work. For more information on this approach, see the Public Knowledge Project, which has designed this system to improve the scholarly and public quality of research.

Archiving
This journal utilizes the LOCKSS system to create a distributed archiving system among participating libraries and permits those libraries to create permanent archives of the journal for purposes of preservation and restoration.

Publication Frequency
There will be three issues of IJEDICT per year, plus occasional special issues.

Publication Classification Details
Key title: International journal of education and development using information and communication technology
Abbreviated key title: Int. j. educ. dev. using inf. commun. technol.

ISSN: 1814-0556

About the journal

The International Journal of Education and Development using Information and Communication Technology (IJEDICT) is an e-journal that provides free and open access to all of its content. It aims to strengthen links between research and practice in ICT in education and development in hitherto less developed parts of the world, for example, developing countries (especially small states), and rural and remote regions of developed countries. The emphasis is on providing a space for researchers, practitioners and theoreticians to jointly explore ideas using an eclectic mix of research methods and disciplines. It brings together action research and case studies in order to assist in the transfer of best practice, the development of policy and the creation of theory. Thus, IJEDICT is of interest to a wide-ranging audience of researchers, policy-makers, practitioners, government officers and other professionals involved in education for development in communities throughout the world.

Coverage

IJEDICT has a major emphasis on the use of ICT in education and development in hitherto less developed parts of the world. The journal includes descriptive case studies about education projects in developing countries and in rural and remote regions of developed countries, as well as research articles evaluating such projects, developing policy or creating theory. Topics covered include, but are not limited to, the following areas: distance learning, e-learning, flexible learning and delivery, blended learning, m-learning, open learning, e-literacy, e-portfolios, and MOOCS.

Notification of new articles

Sign up to receive regular notification of new IJEDICT issues and articles at:
http://ijedict.dec.uwi.edu/notification.php

Call for Papers/Articles

IJEDICT comprises the following sections: "research articles" (academic, peer-reviewed articles); "studies from the field" (edited but not peer reviewed case studies); “research in progress”; “literature reviews”; "project sheets" (brief descriptions of relevant projects); "notes from the field" (working papers, and other commentaries on relevant topics); "book/media review" (software and other media reviews).

The Editors welcome submissions at: http://ijedict.dec.uwi.edu/submissions.php

Section Policies

Editorial
This section contains the editorial written by the editors for the specific issue.

Refereed Articles
This section contains articles that have been reviewed by at least two academic peers in a process that ensures that authors and reviewers remain unknown to one another. To be included in this section, articles must be based on research and scholarship, and contribute "new" and significant knowledge to the field of ICT for education and/or development. Reviewers for research articles are selected from the Editorial Board, the Review Board and the Peer Review Panel.

From the Field
This section includes peer-commented and editorially reviewed case studies (2000-5000 words) of the use of ICT in education and/or development.

Invited Articles
As the name suggests, "Invited Articles" are ones specially requested by the Editors. Generally, they are editorially reviewed.

Research in Progress
This section includes peer-commented and editorially reviewed articles describing research in progress.

Literature Reviews
This section includes peer-commented and editorially reviewed articles that review the literature of the use of ICT in education and/or development.

Project Sheets
This section includes brief descriptions (500-1000 words) of education and development projects that utilise ICT.

Notes from the Field
This section contains short comments or notes that are useful for practitioners working in the field of ICT in education and/or development.

Book/Media Reviews
This section contains editorially reviewed reviews of books that are relevant to the use of ICT in education and/or development.

Submission of Articles

Authors can upload papers, as well as data sets, research instruments, and source documents through the journal's Submissions section. Papers, figures, and appendices can be submitted in a variety of file formats, including Microsoft Word and RTF (Rich Text Format).

Registration and login are required to submit items online and to check their status.

Author Guidelines

General Information
- Submissions are invited for all sections of this journal. Refereed articles should be between 3,500 and 6000 words in length. Project descriptions for the "Project Sheets" section should be between 500-1000 words in length. Submissions for other sections of the journal can be any length.
- Submissions can be in Microsoft Word, Rich Text Format (RTF), or equivalent Open Source document file format.
- Use Arial 12-point font for the Title, which should be in bold "title" (upper and lower) case.
- Use Arial 10-point font for the remainder of your article.
- First level headings should be in bold uppercase.
- Second level headings should be in bold "title" (upper and lower) case.
- No footnotes please - instead use endnotes.
- Photographs, maps, diagrams and other audio-visual aids are encouraged. Please include these in the text where and as they should appear. Please provide images in gif or jpeg formats.
- Note that all submissions are checked for originality using Turnitin before being sent out for review.

Abstracts
Please provide an abstract of approximately 100 words. The abstract should be included in your article in the submission file, but it should also be copied into the appropriate text box during the on-line submission process.

Biography
Please supply a short (100 word) biography for each author. This should include the name, rank, institution, institutional address, and email address. Do not place the biography in your submission file but copy it into the appropriate text box during the on-line submission process.

Style
Submitted manuscripts must be written in the Harvard editorial style:
- References should relate only to material cited within the manuscript and be listed in alphabetical order, including the author's name, complete title of the cited work, title of the source, volume, issue, year of publication, and pages cited. See the following examples:

  Marshall, S. (1991), "A genre-based approach to the teaching of report-writing". English for Specific Purposes, vol. 10, no.1, pp. 3-13.

  Taylor, W. & Marshall, S. (2002), "Collaboration: the Key to Establishing Community Networks in Regional Australia", Informing Science, vol. 5, pp. 155-162.

  Marshall, S., Taylor, W., & Yu, X. (eds.) (2003), Closing the Digital Divide: Transforming Regional Economies and Communities with Information Technology, Greenwood Publishing, Westport CT.
- Citations in the text should include the author's name and year of publication where you use the source in the text, as in the following examples:

  In this way, information technology can be seen to effect and influence changes in organisational structure (Orlikowski & Robey 1991).

Edwards (1995, p.250) views the globalising of distance education as "invested with the uniform cultural messages of modernity".

Globalisation, especially in relation to open and distance education, will reduce the tolerance of difference and so "how can local issues and contexts be addressed?" (Evans 1995, p.314).

- Further information about the Harvard editorial style can be found at:
  http://www.lmu.ac.uk/lskills/open/sfl/content/harvard/index.html

Copyright Notice

Copyright for articles published in this journal is retained by the authors, with first publication rights granted to the journal. By virtue of their appearance in this open access journal, articles are free to use, with proper attribution, in educational and other non-commercial settings.

Privacy Statement

The names and email addresses entered in this journal site will be used exclusively for the stated purposes of this journal and will not be made available for any other purpose or to any other party.

Principal Contact and Mailing Address

Dr. Denise Gaspard-Richards
Chief Editor, IJEDICT
The University of the West Indies Open Campus
Esmond D. Ramesar Centre, Chaguanas,
Trinidad and Tobago, West Indies
Email: denise.gaspard-richards@open.uwi.edu

Table of Contents

editorial

Editorial: Editorial: Behavioural Intention to use Technology, ICT Leadership Education, and Use of Information Systems and Educational Software 2
Denise Gaspard-Richards

refereed articles

Social Media Usage for Computing Education: The Effect of Tie Strength and Group Communication on Perceived Learning Outcome 5
Friday Agbo, Olayemi Olawumi, Sunday Olaleye, Emmanuel Kolog, Solomon Oyelere, Richard Agjei Dandison Ukpabi, Abdullahi Yunusa, Saheed Gbadegeshin, Luqman Awoniyi, Kehinde Erinle, Emmanuel Mogaji, Aziaka Silas, Chijioke Nwachukwu, and Adedayo Olawuni

Intentions of First Year University Business Students to use Smartphones as learning Tools in Botswana: Issues and Challenges 27
Kanos Matyokurehwa, Norman Rudhumbu,and Chiedza Mlambo

An Analysis of Smartphone Security Practices among Undergraduate Business students at a Regional Public University 44
Amita Chin, Philip Little, and Beth Jones

Assessment of Teachers' Pedagogical Knowledge on the Utilization of Information and Communication Technology in Kwara State, Nigeria 62
Omotayo Obielodan, Emiloju Omojols, Olawale Tijani, and Nathaniel Samuel

User perceptions on the use of Academic Information Systems for decision making support in the context of Tanzanian Higher Education 72
Anna Kayanda, Lazaro Busagala,and Matti Tedre

Usable Educational Software: Teacher-educators' Opinion about *Ọpón-Ìmọ̀* Technology Enhanced Learning System, Nigeria 88
Olawale Tijani, Omotayo Obielodan, and Abiola Akingbemisilu

ICT Leadership Education for Agricultural Extension in Sri Lanka: Assessing a Technology Stewardship Training Program 107
Gordon Gow, Uvasara Dissanayeke, Chandana Jayathilake, Isuri Kumarasinghe, Kumudu Ariyawanshe, and Sanduni Rathnayake

literature review

The adoption of open access journals for publishing management research: A review of The literature and the experience of The University of the West Indies 126
Haven Allahar and Ron Sookram