

Editorial: Technology Solutions for Improving Teaching and Learning Experiences

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We extend a special welcome to Issue 1, 2022, as we enter our third year of the “new normal” in HEIs and our respective education systems, since the WHO declaration of a global pandemic. Our narratives continue to evolve and our articles in this Issue situate the reflections, data analyses and strategic thinking of our authors in their efforts toward achieving sustainability of our HEIs and adaptation to the realities of our economic and social environment.

In this Issue we present articles from or about India, Uganda, Tanzania, Canada, South Africa, Kenya, Ghana, the USA, and Ethiopia. A cross cutting theme in the articles is facilitating learners during the COVID-19 pandemic and developing sustainable solutions for the future of teaching and learning.

Refereed Articles

The articles in this section focus on technology solutions in higher education, and ICT integration in the curriculum. Student learning experiences and faculty ICT usage intentions post the pandemic are also explored. We also feature articles that discuss MOOC enrollment, gender and distance education, and curriculum design for active learning and effective online learning experiences. The articles also present insights for the practical use of ICT tools and digital technology for learning during and post the pandemic

Factors affecting Learning Management Systems Usage in HLIs

In the first article in this section **Hamadi Mtani** and **Jimmy Mbelwa** explore the factors impacting use of Learning Management Systems (LMS) in higher learning institutions (HLIs). Despite the advantage of having these LMS in institutions, usage is still a challenging problem. Using TAM, UTAUT2, and the D&M success models, they conducted mixed-method sequential explanatory research at the University of Dodoma (UDOM). The authors discuss their results which revealed that perceived usefulness, instructors' self-efficacy, and intrinsic motivation have an influence on the usage of LMS amongst instructors at the university. The findings of this study will be useful for LMS implementers seeking strategies to assist with increasing LMS usage to achieve their desired results.

Perceptions of new lecturers towards adopting an LMS in South Africa

Another of the articles in this section lends focus to Learning Management Systems (LMS) as a key digital tool that most institutions have developed for their lecturers and students to manage their online academic activities. **Mphoentle Modise** and **Abueng Molotsi** explore new lecturers' perceptions of adopting and using an LMS for facilitating online modules at an open distance and e-learning (ODEL) institution in South Africa. The authors note that new lecturers often have no experience of the ODeL context and therefore encounter challenges using distance education technologies to teach and support students. The findings revealed that most lecturers were not using the university's LMS frequently, due to factors such as lack of proper skills, the design of some LMS functions and the lecturers' attitudes. The authors recommend that relevant training be aligned with the specific digital literacy needs of lecturers, to effectively teach and support students.

MBA students' perceptions of challenges and attitudes towards using MS Teams

On the theme of integrating software in the teaching and learning environment, **Cheng and Ifinedo** discuss MBA students' perceptions of challenges and attitudes toward using Microsoft Teams (MST) for collaborative work early in the COVID-19 pandemic. A key finding noted by the authors is the lack of IT readiness at the university, including training for the university's faculty, staff, and students on the use of such tools, the lack of IT skills among the university's stakeholders, and limited efforts toward using online learning tools. The authors offer recommendations that include ongoing ICT training for faculty and students, making it mandatory for faculty to teach at least one of their courses in online format and development of dedicated software tools that could help to increase the use of such tools for online learning and teaching.

Implementing Interactive Literacy Software in Early Childhood Education

Next, we explore a case of implementing the free web-based interactive literacy software, ABRACADBRA, in early childhood education classes in Kenya. **Iminza, Lysenko, Wade & Abrami** focus on the changes in teaching resulting from use of the software and posit that use leads to improvements in the young students' foundational reading ability and computer skills among others. The authors report that a combination of teacher resilience and school leadership drove successful implementation of the software and they suggest areas for future research including, the effects of the software on a range of preschoolers' learning outcomes and an examination of the training and support model for optimal, sustainable, and scalable effects on instruction.

Student learning experiences in a flipped classroom

In a study of student learning experiences in a flipped classroom, **Aidoo, Tsyawo, Quansah & Boateng**, examine the student perceptions of their learning outcomes. The authors used a mixed case study research design for their study and among the findings they noted that most students had positive perceptions of the flipped classroom in terms of engagement, usefulness, effectiveness, expectation, and satisfaction and would recommend the course taught using the flipped classroom approach to other students in the Ghanaian context. However, the authors noted that students faced some challenges learning in the flipped classroom environment due to a lack of resources to support their learning. The study contributes to the existing literature on flipped classrooms for stakeholders in developing countries.

Student perceptions influencing MOOC enrolment

In this article entitled **Student perceptions influencing MOOC enrolment in Higher Education Institutions: An IQA perspective**, **Lexman & Baral** discuss the drivers influencing students to enroll in Massive Open Online Courses (MOOCs). The authors conducted focus group discussions (FGD) and interviews among a sample of students at a business school in India. Their findings discussed in the article identified 'self Interest' and 'institutional requirement' as the primary drivers for enrolling in MOOCs, while 'employability' and 'result demonstrability' emerged as the primary outcomes. The authors conclude that understanding learner perspectives and making the necessary pedagogical affordances could help to realize the tremendous potential earlier envisaged with the introduction of MOOCs to support learner engagement and retention in the future.

Review of Online Examination Security for the Moodle LMS

During the COVID-19 pandemic there has been greater need to transform learning and teaching modes from conventional face-to-face to fully online including use of platforms for online examinations. In this study **Said Ally** explores the security profile of the Moodle platform as an

integral component for administration of online examinations. The author reviews the pedagogical assessment features, software configurations, and settings of the Quiz module and validates the Moodle Quiz module as a workspace that meets the practical requirements for an efficient, secured, cost-effective, and virtually enabled standard online examination platform. The author also acknowledges that it is only when the software is properly and securely hosted and configured on a reliable computing infrastructure, that its effectiveness is assured.

Continued usage intentions of digital technologies post the COVID-19 pandemic

In a paper entitled, **Continued usage intentions of digital technologies post-pandemic through the Expectation-Confirmation Model: the case of a Tanzanian university** the authors explore the intentions of faculty to continue using digital technologies post-pandemic in the Tanzanian context. The study adapted the Expectation-Confirmation Model to investigate continuance usage intentions of digital technologies in enhancing teaching activities. The findings indicate that perceived usefulness and satisfaction are two factors that motivate instructors' continuance usage intentions and continued use of digital technologies in teaching is defined by pragmatic concerns and structural issues related to access, cost, and know-how. The authors, **Mtebe** and **Gallagher** note the need for digital training, accreditation, and localized content that has linkages to the lived experiences of teachers in the Tanzanian context. They posit mitigation of the barriers related to data costs and connectivity within a participatory and incentivized model. The authors suggest that the findings may be applicable to institutions that are developing context-specific digital training for teaching staff.

Exploring the Education Experience in Online Learning

The effects of the COVID-19 pandemic on teaching and learning are further explored in the article by **Kimera Moodley, Mari van Wyk, Anna Robberts & Eugenie Wolff**. The authors explore the implications of online learning continuing post pandemic focusing on the experiences of students in a short course on "*Instructional Design Tools for E-learning*". The reflections of the participants and the outcome of a course evaluation survey indicate the importance, affordances, and shortcomings in designing for online learning. The study findings indicate the positive effect of dynamic and authentic learning experiences and highlights the significance of good design practices.

Moderating role of 'Gender' in Students' Acceptance of Distance Learning

Moving away from the themes of integration of ICT and learner experiences, in this article **Nsibirano, Kabonesa and Nannyonga** present the results of a cross sectional study in Uganda aimed at understanding learners' awareness and perceptions of distance learning in the context of that country's universal access in education policy and the lack of development of the physical or the online infrastructure to support an increase in enrolment. The authors posit that interested applicants are denied an opportunity to enter the largely on-campus programmes on offer, and often with obvious gender related consequences. Their findings show that what male and female students know, and their perceptions of distance learning, are influenced by the positive and negative views they hold.

Beyond boundaries of cultural capital for inclusion of IT in the curriculum

In an article entitled **Beyond Boundaries of Cultural Capital in Determining the Inclusion of Information Technology in High School Curriculum**, **Alton Dewa** used Bourdieu's conception of cultural capital to explore why public schools in South Africa shun away from including IT in their curriculum. The findings of this study suggest it is a challenge for schools designated as having low

cultural capital to offer IT among their subjects as it is not practiced by the community or society in which the schools exist. The paper concludes by noting that cultural capital does not hinder students' performance and students from low cultural capital communities can achieve good grades even though they learn under difficult circumstances of inadequate educational resources.

Improving Data Visualization Skills: A Curriculum Design

In our final article in this section, we continue along the theme of curriculum inputs, and **Asamoah** presents a curriculum designed for teaching basic and advanced concepts in data visualization. The author used the survey method to examine whether respondents perceived the pedagogic approach to have enhanced their data visualization competence. The findings indicate student preference for a hands-on pedagogic approach to learning data visualization as compared to an entirely theory-based approach. The participants rated most components of the curriculum highly as well as the pedagogical structure. The author concludes by noting that as a cognitive tool, the students recognized that visualization helps to generate deeper insights into data, and it supports effective decision-making.

From the Field

The articles in this section present some interesting and important insights for continuity of education provision and how the integration of ICT, adaptations of software and instructional design imperatives may best assist in times of disruptions to education delivery such as occurred with the COVID-19 pandemic.

Information System Innovative Framework for Online Oral Examinations

In our first article in this section **Said Ally & George Oreku** highlight a response to the conduct of assessment. The authors note the vulnerability of traditional face to face examinations to high security risks and administration costs. The paper presents a framework for the conduct of oral examinations online. The authors present the **OREX** framework, which was tested during the early months of the COVID-19 pandemic that provided the university stakeholders with a viable alternative assessment system. The article brings insights for achieving a sustainable digitally enabled solution in a mechanism that can be easily adopted by higher learning institutions.

ICT Integration into the Curriculum of Ghanaian Pre-Tertiary Schools

In the context of ICT integration in the curriculum, in this article the authors draw on the COVID-19 pandemic lockdown experience of a higher education institution in Ghana in its effort to fully utilize the Online Teaching and Learning platform. **Ibrahim, Mohammed Gunu, Ibrahim Nantomah & Fuseini Inusah** focus on ICT integration in pre-tertiary institutions and their findings revealed barriers to effective ICT integration, including inadequate computers, inadequate network connectivity and lack of school level ICT policies. It was also revealed that apart from ICT being taught as a subject in the schools, not much is done to ensure the use of ICT in teaching other subjects. The authors recommend infrastructural development and technical and professional training of teachers at the pre-tertiary school level as an aid to ICT adoption at the higher levels of the education system.

Incorporating Active Learning Into the Design of Online Management Courses

In this article, authors **Colleen Wolverton & Brandi Guidry Hollier** discuss the importance of reflecting on best practices that can aid in the presentation and construction of knowledge in online environments. The authors provide faculty with guidelines to expedite the design process for developing high-quality online courses that incorporate important pedagogical elements, such as

active learning, into their online course design. Their findings suggest the importance of feedback and evaluation, design considerations for shortened time frames of online courses, reiterating the importance of students checking their course assignment sites daily, simplicity of course design layout for ease of use on various platforms, and careful considerations regarding redesign of face to face courses into online courses.

Research In Progress

Integration of ICT into Ethiopian Higher Education Institutions Teaching-Learning Practices

In this article the authors continue to explore the theme of ICT integration. **Ergado, Desta & Mehta** discuss the contributing factors impacting the level of ICT integration in higher education teaching and learning practices in Ethiopia. The authors used a qualitative case design and drew on the Technology Acceptance Model (TAM) and Technology, the Organisation, and Environment (TOE) framework. Their findings indicate limited ICT resources for education in Ethiopian higher learning institutions and where available, the limited resources are not used effectively. Using TAM and the TOE framework, the authors present a conceptual framework to guide ICT integration. The framework may be useful for stakeholders in higher learning institutions.

Continued thanks from the Editorial Team!

We continue to thank all our authors for your patience and understanding. We continue in service to you, our readers, and potential authors. We once again take the opportunity to remind potential authors of our journal guidelines that should be observed when submitting articles for consideration. Attention to the author guidelines at: <http://ijedict.dec.uwi.edu/submissions.php#guidelines> will enhance our review process and improve the time to completion by our review panels.

Stay safe and continue to be well as we navigate through 2022!

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