The African Journal of Information Systems

Volume 5 | Issue 3 Article 1

7-1-2013

e/merging Across Africa: Five Papers on the Use of Educational Technology in African Higher Education

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Special Issue

Volume 5, Issue 3, July 2013, ISSN 1936-0282

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(*Received February 2013, accepted May 2013*)

ABSTRACT

This guest editorial comments on the rapidly changing environment for the use of Information and Communication Technologies (ICTs) in African Higher Education Institutions (HEI), introduces the e/merge online conferences and gives a brief introduction to the papers in the special issue.

Keywords

Educational technology, higher education, universities Africa, ICTs in education, online conference, online network, e/merge, guest editorial

THE CHANGING EDUCATIONAL TECHNOLOGY LANDSCAPE IN AFRICAN HEI

It is less than 15 years since a few of the best resourced universities in Africa started exploring the opportunities for institutional wide use of web enabled learning management systems for teaching and learning. Since then we have seen rapid growth in the use of digital and networked learning technologies in African higher education, including ventures into blended and online universities by many universities that struggle with expensive bandwidth (Gunga and Ricketts, 2007; Hollow and ICWE, 2009), poor infrastructure, human capacity constraints (Czerniewicz and Ngugi, 2007:ix) and sometimes unreliable electricity supply. Fortunately, the conditions for the use of ICTs in higher education across Africa are improving with developments in national and higher education sector ICT policies and support systems, cheaper and faster internet access (Osiakwan, 2012:38) due to several undersea cable projects along the African coast (Song, 2012), radically improved access to mobile internet connections (ICWE, 2013:32) and donor funded projects such as the Partnership for Higher Education in Africa's Educational Technology Initiative (OER Africa, 2013) to enhance the capacity of institutions to teach with technology. In the current era it seems that the integration of ICTs within the teaching, learning, research and administrative systems of higher education institutions is becoming more widely

understood across Africa as both a major strategic capability as well as a resounding signal of commitment to contemporary modes of engagement and to the development of students who are equipped to thrive in a globalized knowledge economy (Taylor 2009:52). This trend is evidenced by the growth of participation in Africa-based conferences with a strong focus on ICTs in education such as eLearning Africa, IST Africa and the e/merge online conferences. Unfortunately, the growing availability of ICTs in African Higher Education Institutions doesn't automatically translate into transformed pedagogical practices. Unwin, et. al (2010: 19-20) report limited use of integrated systems, limited understanding of the affordances of the Learning Management System (LMS) and obstacles in the forms of inadequate infrastructure and unmet training needs of educators.

THE E/MERGE ONLINE CONFERENCES

The articles published here originated as papers and presentations in a unique online conference that attempts to bring educational technology practitioners and researchers across Africa and the world into shared online conversations about the use of educational technology in African Higher Education Institutions in particular. The intent of the periodic e/merge conferences convened since 2004 by the Centre for Educational Technology at University of Cape Town has been to share good practice and good research and to provide a facilitated space for time bound community of practice interactions, which foster fruitful conversations about and across related specialist professional practices in a landscape of practices. The landscape includes educators, course designers, researchers, professional development experts, technologists, educational managers, policy experts and postgraduate students (Carr, Czerniewicz and Brown 2010). The e/merge conferences have attempted to foster engagement across African regions and between colleagues in Africa and other continents. Colleagues based outside Africa including members of the African diaspora have always been warmly welcomed to e/merge conferences as participants and presenters. e/merge is a relatively small conference, but over time it has become increasingly accessible to presenters and participants from Southern, East and West Africa who are able to engage flexibly depending on their interests and availability and without exposure to the costs of travel and accommodation associated with face to face conferences. The three day period of asynchronous discussion assigned for each paper and related synchronous interactions with presenters also allow for inclusive and reflective conversation that could sometimes surpass the discussion of presentations in large face to face conferences where the fast moving conveyer belt may permit only a few minutes of scheduled discussion per paper.

e/merge 2012 (Centre for Educational Technology, 2012), held in July 2012, represented the most advanced form of the generic e/merge conference design including the design of a social media inflected environment for formal conference interactions that combined the open source Wordpress and Buddypress with an interface to an Adobe Connect live meeting server. Formal conference communication expanded into socially networked conversations in the e/merge 2012 Facebook group and under the #emergeafrica hashtag in Twitter.

Over the two weeks of e/merge 2012 there were five keynotes, 32 presentations and six online workshops. The presenters came from Australia, Germany, Ivory Coast, Mozambique, Nigeria, Norway, Rwanda, South Africa, Sweden, Tanzania, United Kingdom, Uganda, the United States and Zambia. Eight of the presentations were of double blind, peer reviewed papers. There were 383 registered participants from 25 African countries and from four other continents including a strong representation of participants and presenters from partner universities in the Partnership for Education in Africa Educational Technology Initiative (PHEA ETI). A high proportion of participants brought their voices to the formal and informal conference spaces. In total 123 participants posted messages to the online

conference forums, 67 posted messages in the conference Facebook group and 118 participated in live online meetings and discussions.

With the support of a feasibility study funded by the Carnegie Corporation in 2011-12 the e/merge conference brand has been leveraged into e/merge Africa (Centre for Educational Technology, 2013), which is the name of a new network focused on the use of educational technology in higher education in Africa. e/merge Africa, which was launched at eLearning Africa 2013 in Windhoek, Namibia on May 29, 2013, will start running regular online activities in July 2013. The new network will be open to participants from Africa and the rest of the world including the growing number of educational technologists in the African diaspora.

THE ARTICLES

This special issue consists of five articles by authors from Mozambique, Nigeria, South Africa and Sweden on the use of educational technology in African higher education institutions. The authors engage with the ecosystems of higher education at multiple levels including the use of ICTs in 19 Mozambican institutions (Muianga et. al), application of emerging technologies within South African universities (Gachago et. al), design of a digitally mediated learning activity (Deacon and Wysculley), use of mobile phones for distance learning tutorials (Adedoja et. al), and the design of a lecture recording process and related educator practices (Collier-Reed). Two shared contexts are those of accountability and collaboration—with students, in project and research teams, within and across institutions and across national boundaries. The paper by Adedoja et al arises from the Partnership for Higher Education in Africa Educational Technology Initiative in which the Carnegie Corporation of New York, The Ford Foundation, the John D. and Catherine T. MacArthur Foundation, the Rockefeller Foundation, the William and Flora Hewlett Foundation, the Andrew W. Mellon Foundation, and the Kresge Foundation pooled their resources in one grant to support 26 distinct projects across seven African universities in transforming their capacity to use ICTs for teaching and learning. I hope that this collection will garner some interest within and beyond professional educational technologists in the higher education sector in Africa.

Collier-Reed from University of Cape Town investigates the design of a lecture recording process that can support learning by students whether they attend the lectures or watch lecturecasts. Underlying all successful innovation in the integration of ICTs within higher education is the agency and capacity of educators. This study reviews the limited existing literature concerning the technologies and pedagogy or lecturecasts and draws on reflections by the lecturer, student questionnaire and interview responses, and logs of resource use. Collier-Reed from University of Cape Town focuses his attention on the highly under-researched area of "the design and implementation of lecturecasting and its associated impact on an academic's classroom practice." In doing so, he eloquently shares how his technological and pedagogical practices have evolved to support the learning of students within and outside the lecture room and responded to student perceptions and experiences of lecturecasting. Collier-Reed reflects on the tensions between providing an engaging experience of lecture participation for the students in the venue and recordings that are intelligible and useful both for revision and sometimes as a substitute for the face-to-face lecture. Making optimal use of a combination of technologies to address both audiences required "a delicate balance between moving within the class, the podium and the projection screen" to ensure that both audiences were held in mind during the interaction. The author reports some interesting data about student practices in the use of lecturecasts for revision during weekends, navigation to specific sections of the lecturecast using index marks, and downloading from the university network to limit private use of expensive bandwidth. This article will be of interest to educators and educational

technologists who are engaged in the planning or implementation of lecturecasts. It also exemplifies how an educator can use multiple lenses to engage critically with their own practices.

Adedoja et. al from the PHEA ETI project team at University of Ibadan in Nigeria investigate a distance education project that involves students in mobile tutorials using smartphones, which some students acquired during the module to obtain access to the tutorials. Mobile phones are the most ubiquitous digital communication technology in Africa so it is important for Higher Education Institutions to make use of their availability and growing affordances, especially in light of the rollout of relatively affordable mobile broadband access, the convergence of web and mobile communication, and the increasing uptake of smartphones by students and staff. After surveying relevant literature they use Davis's Technology Acceptance Model to explore the effects of perceived usefulness, perceived ease of use, interest in the technology and technology self-efficacy on the use of the tutorials. They also report on the challenges experienced by students and educators and suggest ways to address these in future iterations of the course. Their results suggest that interest in using the mobile tutorials and actual use of the mobile tutorials were the most significant determinants of acceptance of the mobile tutorials. The positive correlation between perceived usefulness and perceived ease of use suggests that addressing constraints identified by students such as logging in problems, unreliable mobile Internet connections, poor ICT skills and complicated navigation may in turn yield improved student acceptance of the mobile tutorials. One of the interesting features of this article is its focus on an intervention that moves beyond course announcements and facilitating access to resources to the more ambitious goal of engaging students in learning activities.

Gachago et. al are members of an eighteen-member research team across several South African universities, which is investigating the potential for using emerging technologies to "transform teaching and learning interactions and paradigms in the South African higher education sector." In the course of their research it became clear that several potential meanings were linked to emerging technologies and that the sparse literature of emerging technologies provided limited clues and no widely agreed definitions. Tensions "between conceptualizations of emerging technologies in the literature, those of the survey respondents and those of members of the research team" led to a very fruitful choice to investigate how the individual researchers in this project understood emerging technologies. The team tasked with this then set about developing a qualitative design where researcher statements were coded by three members of the research team. The resulting spread sheet with codes and examples was then analyzed and triangulated with findings from the survey of 262 respondents across the South African higher education sector. What counts as an emerging technology is highly context specific and this could be determined by the differences between developing and post-industrial countries, the local level of infrastructure, subject area, and the experience and practices of individual lecturers or groups of lecturers. A technology such as LMS might then be emergent in some contexts. In fact survey respondents mentioned LMS as the "most innovative tool used by educators in South African Higher Education." Among the responses from the research team it was also interesting to note both an assertion of the disruptive potential of emergent technologies and the opportunities for both lecturers and students to take agency. Ultimately the significance of this article lies in the capacity of the authors to richly interrogate a concept that has become part of the first world rhetoric of educational technologists within the very different contexts of South African Higher Education.

Muianga et. al based in Sweden and Mozambique survey the use of ICTs in Mozambican Higher Education in 19 institutions. Their study considers the ICT policies of government and higher education institutions, ICT infrastructure, organizations supporting the higher education sector, and access and use of ICTs within the sector. The context described here is more difficult than that experienced by the

South African colleagues studying the use of emerging technologies in higher education. Mozambique is one of the world's poorest countries with a 52% illiteracy rate and access to electricity by only 18% of the population. Many of the universities in the study only had dial-up access to the Internet and staff who were poorly trained for the effective use of ICTs in their work. Despite these obstacles rapid economic growth and enabling government policy have supported improvements in infrastructure, access to higher education and the rollout of ICT facilities in the sector. Bandwidth is cheaper and more accessible due to undersea cable projects and the expansion on mobile Internet access. Alongside the examples of universities that make highly constrained use of ICTs there are several which have useable infrastructure, functional university websites and online learning environments. The authors cite examples of institutions that offer blended courses and have expanded their distance education offerings. Issues of pedagogical change and staff development in the integration of ICTs are persistent challenges across the sector. From their study it appears that there are widening gaps between Mozambican universities with significant ICT capacity and those without within this phase of rapid economic, institutional and technological change. This overview of the use of ICTs in Mozambican higher education is likely to be of great interest to policy makers, funding agencies and researchers and students of the use of ICTs in developing countries.

Deacon and Wynsculley from University of Cape Town and University of the Western Cape in South Africa share highly engaging reflections and insights from a collaboration between educational technologists and Film and Media educators to develop an activity to support students in the development of scriptwriting and critical media analysis skills. Since the activity was piloted in 2001, it has gone through several iterations of design conversation which respond to tensions concerning the balances of "analysis and critique with more practical skills" in the curriculum. The authors describe the evolution of a technology mediated learning design, which scaffolds the scriptwriting exercise with automated feedback statements based on industry conventions to remind students of the expectations of both news editors and readers of the news. Drawing on the work of Engeström, Deacon and Wynsculley suggest that the development of the scriptwriting activity required expansive learning within the design and development team. In an observation that may resonate with the experience of any effective learning designer in a complex landscape they state that they knew "neither the outcomes nor the pathways prior to developing the scriptwriting exercise; these had to be discovered and negotiated collaboratively." At an operational level Deacon's willingness to creatively navigate this unknown territory with a team of educators exemplifies the role of the learning designer in facilitating a design and delivery partnership which responds flexibly to contradictions within the curriculum. From a research perspective this paper makes an intriguing contribution by considering expansive learning among educators and educational technologists within a team planning a learning activity.

ACKNOWLEDGEMENTS

Thanks to Solomon Negash, Peter Meso and the AJIS editorial board for their willingness to publish a special issue from e/merge 2012 and for their support throughout the process of reviewing, selecting and improving articles for the special issue. Thanks are also due to the Ford Foundation and the Carnegie Corporation for funding the e/merge 2012 online conference and supporting the e/merge Africa network. I would also like to acknowledge the collaboration of the Centre for Educational Technology leadership, e/merge presenters, reviewers, project managers, online facilitators, web developers, and learning technology specialists which made these conferences possible.

REFERENCES

Carr, Czerniewicz, L. & Brown, C. (2010). Supporting Changing Cultures through emerging practices. In *Changing Cultures in Higher Education- Moving Ahead to Future Learning*. Edited by Ehlers, U.D. and Schneckenberg, D. Berlin Heidelberg: Springer, 285-298.

Centre for Educational Technology (2012). e/merge 2012 website; Retrieved June 11, 2013 from http://emerge2012.net

Centre for Educational Technology (2013) .e/merge Africa website; Retrieved June 11, 2013 from http://emergeafrica.net

Czerniewicz, L. and Ngugi, C. (2007) *ICTs and Higher Education in Africa*. Centre for Educational Technology, University of Cape Town; Retrieved June 11, 2013 from http://www.cet.uct.ac.za/projects

Gunga and Ricketts. (2007). Facing the challenges of e-learning initiatives in African universities. *British Journal of Educational Technology*, 38, 5, 896–906.

Hollow, D and ICWE. (2009). eLearning in Africa: Challenges, priorities and future direction; Retrieved June 11, 2013 from http://www.gg.rhul.ac.uk/ict4d/workingpapers/Hollowelearning.pdf

ICWE, eLearning Africa Report. (2013).

OER Africa, PHEA ETI Project Home. (2013). Retrieved June 11, 2013 from http://www.oerafrica.org/phea/PHEAETIProjectHome/tabid/170/Default.aspx

Osiakwan, E. (2012). Broadband in Africa: giving innovation a chance? in ICWE (Eds) eLearning Africa Report 2012, ICWE ; Retrieved June 11, 2013 from http://www.elearning-africa.com/pdf/report/ela_report_2012.pdf

Song, S. (2012). *African Undersea Cables*, Many Possibilities Blog, Retrieved June 11, 2013 from http://manypossibilities.net/african-undersea-cables/

Taylor, P. (2009). Higher Education Curricula for Human and Social Development in GUNI (Eds), *Higher Education at a Time of Transformation: New Dynamics for Social Responsibility*, Synthesis of the Guni Higher Education in the World Reports, Global University Network for Education, Palgrave Macmillan,51-3

Unwin, T., Kleesen, B., Williams, J., Oloo, L.M., Alwala, J., Mutimucuio,I., Eduardo, F., and Muianga, X. (2010). *Digital Learning Management Systems in Africa:rhetoric and reality*, Open Learning: The Journal of Open, Distance and e-Learning, 25,1, 5-23