



CAEL Series for Entrepreneurship and Leadership Development in Africa

**A Report by the Centre for African Entrepreneurship and Leadership, University of
Wolverhampton**

Volume I November 11, March 2016

**“Higher Education in the Digital Age – Technology, Issues & Challenges for African
Colleges and Universities”**

Executive Summary

In the light of great advances in digital technologies over the past few decades, and the global massification of Higher Education (HE) during the same period, universities and colleges throughout the world are actively exploring ways in which they can deploy digital technologies to expand access to higher education, provide flexible options for curriculum design and delivery, in the overall bid to provide good quality education and enhance the learning experience of students. This is seen as a key to survival and continuing relevance of universities and other traditional HE providers.

In Africa, in particular, higher education has witnessed significant expansion within the past two decades, with student enrolment going up as much as 300% in many countries. At the same time, there are growing concerns about the cost and quality of higher education in sub-Saharan Africa. By appropriating the benefits of digital technologies, HE institutions can significantly reduce costs associated with one-to-one modes of delivery, without compromising on quality. Furthermore, digital learning presents institutions with opportunities to expand access to students outside their immediate geographical locations, as well as open opportunities to part-time and mature students in an arrangement that is mutually beneficial to students and institutions alike.

This knowledge transfer workshop was designed in response to these challenges and opportunities. Therefore, the sessions explored both simple and more advanced ideas and strategies, including physical arrangement of classrooms, to the use of ICT workstations, the use of digital technologies to provide course contents, and the use of Virtual Learning Environment (VLE) for assessment and feedbacks. Furthermore, participants explored how mobile telecommunication technologies, which are especially popular in Africa, can be deployed and integrated into pedagogic practice.

This report provides recommendations on how to establish departments responsible for providing support and continuous training for staff engaged in developing teaching and pedagogies for student-support using technologies.



CAEL Series for Entrepreneurship and Leadership Development in Africa

Introduction

This training, attended by senior academic and non-academic staff of higher education institutions in Nigeria, was provided in response to the need for HE providers in Nigeria and sub-Saharan Africa to respond to rising popularity of digital technologies in the continent. The workshop held between 14th and 18th November 2015.

The diffusion of mobile telecommunication technologies, and other types of ICT technologies, has had significant impact information access and social interactions, especially among young people, in Africa. However, the ubiquity of these technologies has not had significant impact on the way universities and colleges deliver their courses, as these HE institutions still rely heavily on traditional approaches to curriculum design and delivery. Increasingly, many African students are taking advantage of digital learning opportunities provided by overseas institutions, leaving African institutions with much to do in order to catch up with modern trends in the provision of digital learning.

This Knowledge Transfer Programme is part of CAEL's ongoing intervention in the areas of capacity building for leadership development and entrepreneurship education in Africa. Within the past five years, the centre has run training programmes focusing on entrepreneurship education and curriculum development, quality assurance, digital and blended learning, among others. More than 150 senior executives of higher institutions in Africa, including vice chancellors, provosts, and directors of centres, have participated in the training programmes. They represent more than 40 institutions of higher learning, mostly from Nigeria.

Digital Technology and Higher Education in the 21st century

There is general agreement on the fact that digital technology has already changed the way students learn in the 21st century (Newman and Scurry, 2001). The debate has shifted, therefore, from the question of whether or not digital technology should be embraced by Higher Education (HE) institutions, to more detailed discussion about the optimal conditions for the integration of digital learning (Endrizzi, 2012). The HE sector has undergone significant changes in recent decades, not least with respect to the global massification of higher education, with global HE enrolment estimated to increase to 125 million by 2020, up from less than a million at the start of 20th century. Student populations are also more diverse, with mature, part-time and international students constituting a significant proportion of global HE enrolment. Compared with the traditional student intakes, these latter categories of students often have different expectations, and require more flexibility with respect to the mode, time and style of learning (Kwok-Wing, 2011).



CAEL Series for Entrepreneurship and Leadership Development in Africa

The increasing popularity of digital technology in higher education is closely associated with the conception of students as co-creators of knowledge in an active learning environment. As Freire (1970) pointed out, in an active learning environment, students should not be seen merely as receptacles for the teacher to deposit knowledge, but as active participants in the process of generating new ideas. Digital technologies can support this process in a variety of ways.

For example, new softwares provides students with opportunities to gain hands-on experience on subjects that require laboratory, while actually spending less time in the laboratory. This is achieved by means of simulation experiments, by which students can test-run and analyse parameters. This reduces the cost and the logistic burden in terms of equipment and staff time, while giving students opportunities to practice and improve their skills, before carrying out the same experiments in a physical laboratory. In other words, digital simulation does not take away the need for physical labs, but provides students with more opportunities for active learning, and makes their work in real laboratories more productive and more efficient (Newman and Scurry, 2001).

Similarly, interactive multi-media facilities provide a wide range of opportunities for students to active participate within a classroom environment, and not just through assignments done outside the classroom. For example, group works in which tasks are projected and carried out on screen can enable productive and authentic student-student interactions, as well as provide opportunities for instant feedbacks (Schrand, 2008).

Finally, through digital learnings, many students today are able to combine their commitment to learning with the demands of work and family. In a highly competitive environment of the 21st century, many HE providers are investing more resources in provision of quality online learning. As structural changes in HE lead to the weakening of geographical monopolies enjoyed by leading HE providers, universities need to adapt and embrace necessary changes, in their battles for survival and continuing relevance in a digitised world (Hiltz and Turoff, 2005).

Training review

The training workshop covered the following topics:

- Technology and the 21st Century Learner
- Digital Campus, Benefits, Issues & Challenges
- Mobile learning opportunities & challenges for Higher Education in Sub-Saharan Africa



CAEL Series for Entrepreneurship and Leadership Development in Africa

- Digital Facilities for Learning and Business Support
- Using Turnitin to detect Collusion and Plagiarism – Benefits & Challenges

The delegates went through a session exploring principles and strategies for management of physical space for learning to encourage a more flexible participatory approach in the classroom. Among others, the session highlighted the need for more “small group” and less “large group approach” to teaching. Participants also reflected on the need to set aside the stifling idea of rows of table facing the front. Instead, flexible work stations, each with relevant ICT facilities, can be set up within the classroom to facilitate better learning experience for students. To this end, participants had a tour of new classroom styles, and the IT lab, in the new building of the University of Wolverhampton Business School.

The delegates were also introduced to the College of Learning and Teaching (CoLT), the unit responsible for academic development, pedagogic research and technology-enhanced learning at the University of Wolverhampton. This is presented as a template for Nigerian institutions to adapt, with due considerations for local contexts and requirements. A unit like CoLT can provide valuable support for staff engaged in teaching and various forms of student support.

The training also highlighted the need for the choice and use of digital technologies to be driven by student-centred pedagogy, rather than the product itself. Thus, in Wolverhampton, there are facilities for computer-aided assessment, e portfolios, learning spaces, curriculum design, and virtual learning environment (VLE), among others.

Participants also explored the potentials and opportunities associated with mobile technology for higher learning in Africa. Mobile telephony is highly popular in sub-Saharan Africa, and teachers are early adopters. While internet broadband is not as widely available, institutions can make better use of 3G and other network facilities in mobile telecommunications to provide study guides, including week-by-week support; summaries and revisions; feedbacks; reminders; notifications of changes and cancellations; and pastoral care.

One of the participants, Dr Godwin Oyewole, who is the college librarian for the Federal College of Education, Osiele, Abeokuta, highlighted the key benefits he gained from the training: “I was struck by the simplicity and effectiveness of the idea of flexible arrangement of the classroom, without the need to use forward facing, static, tables. The chairs on wheels, and the movable tables, make the teaching and learning more interesting. I also like the apps that enable students to recap and highlight areas they want to explore further or need further clarification.” Furthermore, he cited the example of the Visualisation Centre at the University of Wolverhampton’s Science Park, where outside businesses can hire facilities for high-level



CAEL Series for Entrepreneurship and Leadership Development in Africa

meeting with sophisticated digital technology, as well as market their services. This, he said, is a model that can serve his institution very well, as they can invest in advanced digital technologies and make them available for outside businesses to hire. In the light of the fact funding is increasingly a big issue now for Nigerian HE providers; such a service can generate significant internal revenue for institutions. Finally, Oyewole highlighted the use of automated systems for return of borrowed items, and for use of photocopier/printer, in the University of Wolverhampton's library. If these technologies are adopted in his college, it will, in addition to its better efficiency, free up many hours of library staff time, and allow them to focus on more important services requiring one-to-one assistance.

Similarly, Mr Desmond Oparaku, the Deputy Rector of the Federal Polytechnic Nekede, said that participation in the training has helped his institution to embark on comprehensive upgrade of existing digital technologies as well as development of new ones:

“We have a digital park here where most of our ICT programmes are handled. It has been existing for five years but we are upgrading the facilities now. We saw, for example, you have at Wolverhampton what you called a Science Park, where businesses can hire facilities. We want to replicate that. We have also employed consultants to install new digital technologies, including video-conferencing, to enable lecturers to use the option of delivering lectures off-site, in real-time. We aim to install this in two or three weeks. We have not really looked at exploring classroom based facilities, mainly because of the expenses, but we are looking more at conferencing technologies such that lectures can have the flexibility of delivering lectures from their off-campus bases.”

He stated further that the biggest challenge his institution envisage is the development of a digital culture in the institution, similar to what they saw at Wolverhampton. This, he said, entails, encouraging staff and students to embrace the technologies, use them confidently and efficiently, and for the entire institution to develop a strong culture for maintenance and continuous improvement of the facilities.

Recommendations

Based on the workshop, the following recommendations are made for participating institutions to develop digital learning in their respective institutions:

1. Establishment of a unit or department whose sole responsibility is to provide support and ongoing training for staff towards enhanced digital learning in the institution.
2. Promotion of research in pedagogy, with particular focus on use of digital technology for active learning.



CAEL Series for Entrepreneurship and Leadership Development in Africa

3. Provision of appropriate and effective platforms for staff to share ideas and experiences on the use of interactive multi-media and other technologies for enhanced learning of students.
4. Development of collaborative technologies in partnership with other institutions to achieve, among others, good economies of scale.
5. Mobilisation of other stakeholders in government, industry and the He sector for the establishment of a national policy and framework for digital learning.
6. Expansion of digital curriculum provision for mature and part-time students, as well as others outside the immediate geographical location of the institutions.
7. Investment and development of virtual science and engineering labs for simulation of experiments and reduction of time and pressure on physical laboratory equipment.
8. Aggressive appropriation of mobile telephony for delivery of academic contents including study guides, outlines, revisions and summaries.
9. Integration of smart phone applications for instant feedbacks and interactive learning in the class room.

References

- Endrizzi, L. (2012) Digital technologies in higher education: challenges and opportunities, *Veille de l'ifé*, **78**(October), pp. 1–29.
- Freire, P. (1970) *Pedagogy of the Oppressed*, London & New York, Continuum.
- Hiltz, S. R. and Turoff, M. (2005) Education Goes Digital: The Evolution of Online Learning and the Revolution in Higher Education, *Communications of the ACM*, **48**(10), pp. 59–64, [online] Available from:
<http://doi.acm.org/10.1145/1089107.1089139>
http://dl.acm.org/ft_gateway.cfm?id=1089139&type=pdf.
- Kwok-Wing, L. (2011) Digital technology and the culture of teaching and learning in higher education, *Australasian Journal of Educational Technology*, **27**(8), pp. 1263–1275, [online] Available from:
<https://ezp.lib.unimelb.edu.au/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=77923952&site=eds-live>.
- Newman, F. and Scurry, J. (2001) Higher Education in the Digital Rapids, (June), pp. 13–14.
- Schrand, T. (2008) Tapping into active learning and multiple intelligences with interactive multimedia: a low-threshold classroom approach, *College Teaching*, **56**(2), pp. 78–84, [online] Available from:
<http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Tapping+into+active+learning+and+multiple+intelligences+with+interactive+multimedia#0>.