Centre for African Entrepreneurship and Leadership, University of Wolverhampton

Volume Number 8, 2016

"The Internet and Higher Education in the 21st Century: Implications for Access, Delivery and Strategic Planning"

Executive Summary

The internet is changing the way people access knowledge in the 21st century. Universities and other HE providers are therefore compelled to rethink and restructure their approach to curriculum design and delivery, in order to embrace new opportunities to expand their reach, reduce cost and deliver better value for money. In sub-Saharan Africa, where there is grave concern about how institutions can cope with rising demand and drastic expansion of the HE sector, e-learning can be a significant game changer, in terms of expanding access to HE learning without compromising essential requirements of quality.

In the wake of the internet revolution of the late 20th and 21st centuries, traditional approach to higher education delivery is being exposed as too expensive, rigid and out of date. This, in part, is a result of the high cost of physical infrastructure and human resources necessary for face-to-face instructions. Rather than having to choose between traditional and e-learning approaches, HE providers have the opportunity, through the adoption of blended learning, to incorporate the best of both approaches, and at the same time mitigate the limitations associated with either approach.

The workshop featured topics on the use of mobile technology for HE learning in sub-Saharan Africa, plagiarism, and the dynamics of the 21st century learning environment. Participants were introduced to VLE softwares and other applications and ICT facilities in use at the University of Wolverhampton. This includes, among others, the Wolverhampton Intellectual Repository and E-Theses (WIRE)- the official digital repository of academic outputs; *Turnitin*, a web-based application for detecting plagiarism; and *PebblePAD,* which allows students to create e-portfolios.

Based on the training, recommendations were made to the participating institutions to invest resources in acquiring e-learning technologies and soft-wares, as well as capacity building of staff on the use of the new technologies. They were also encouraged to invest in new partnerships with businesses and industry stakeholders, especially those in ICT and mobile telecommunications, in order to tap into sponsorship, funding and technical support opportunities for the enhancement of their e-learning platforms. Furthermore, in order for e-learning approaches to be successful in Nigeria, institutions were urged to invest in e-libraries and support access of students to computers and other hardware.

Introduction

In the past few decades, the Higher Education sector has expanded in Africa, with dramatic increase in students' enrolment, and the entry of private providers into the sector in countries like Nigeria. This same period has witnessed significant progress in Information and communication Technology, and this has forced He institutions in Africa to respond to new ways by which knowledge is created, managed and distributed (Adam, 2003). However, many African universities are still lagging behind in the knowledge revolution induced by advances in ICT, due to the inadequacy of underlying infrastructures, lack of awareness and commitment on the part of university administrators, and lack of interest from policy makers (Achimugu, Oluwagbemi and Oluwaranti, 2010; Mbarika and Byrd, 2005). In response to this challenge, this training was delivered in May 2015, for delegates including Vice Chancellors, Provosts, Bursars, Registrars, Deans and Directors of academic institutes in higher education institutions.

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 corporate governance, quality assurance, entrepreneurship education and curriculum development, 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 education, mostly from Nigeria.

The impact of the internet on higher education in the 21st century

Higher education is changing rapidly in the 21st century. In the light of the high expense of traditional, campus-based model of higher education provision, students, parents and other stakeholders are mounting increasing pressures on universities to demonstrate value for money spent on tuition. Moreover, alternative providers of highly skilled trainings, particular for professional certifications, are challenging the sustainability of the business model of traditional universities (Anderson, Boyles and Rainie, 2012). These alternative providers, relying heavily on e-learning facilities, are able to provide trainings leading to certifications in a manner that cost significantly less to students. They remove, or drastically reduce the requirement for physical contact; are flexible in terms of accessibility and removal of time constraints, and are able to draw on a rich spectrum of expertise for delivery of training content (Baer, 1998).

In response to this challenge, traditional HE providers are increasingly adopting a blended learning approach in a bid to take the best of both online learning and face-to-face instructions, as well as overcome the limitations of both worlds. This blended approach has

been described as potentially transformative, partly on account of the "ability of online learners to be both together and apart—and to be connected to a community of learners anytime and anywhere, without being time, place, or situation bound"(Garrison & Kanuka, 2004, pp. 96). The adoption of e-learning also enables universities to expand beyond their geographical reach, increase their student intakes with minimal demand on physical infrastructure, and solve a wide range of learning and performance problems (Jephias Mapuva, 2009). Moreover, e-learning platforms reinforces the constructivist approach to learning and teaching, where the teacher's role is cast, not merely as agents transferring knowledge, but as facilitators supporting students to produce new knowledge (Brown, 2003).

Alammary, Sheard, & Carbone, (2014) highlighted three design approaches to blended learning courses: i) low impact blend, where extra online activities are added to a traditional face-to-face courses; ii) medium impact blend, in which some face-to-face activities are replaced with online components; and iii) high impact blend, also described as "full redesign", by which a course is redesigned from scratch. In practice, this re-design is often applied at the level of each learning outcome, rather than a whole course level. The low impact blend is often used by those who are relatively inexperienced or reluctant to apply a full-scale blended learning. It is also easier in terms of technological knowhow. The medium impact approach is desirable for incremental implementation on course components, and it allows time for the teacher to build confidence. The high impact approach provides the opportunity to eliminate problems in the existing traditional course.

The growing popularity of e-learning platforms has significant impact on a university's strategic planning (Jones and O'Shea, 2004). Firstly, there are hierarchical challenges associated with the need of staff to work together across disciplines. This entails the need to re-cast departmental boundaries, and the need to manage the resistance of departmental heads who consider this blurring of boundaries as a challenge to their powers. Secondly, the adoption of e-learning has overall implications at the organisational level, in terms of altering views and perspectives of the organisation, not just norms and processes. Thirdly, the success of e-learning approach depends significantly on the level of technical skills among staff members. Therefore, institutions need to invest resources in not only acquiring necessary soft wares but also in mobilising external expertise to support and train staff in the use of e-learning applications.

Training review

Participants went on tours of the University of Wolverhampton's visualisation centres at the Wolverhampton and Telford locations. Among other things, the visualisation centres incorporate modern technology such an extra-large Windows 8 touchscreens, varied 3D capability and a WOW vision box. The delegates also went on a tour of the University's

Faculty of Science and Engineering, where they engaged with state of the art facilities for teaching and research. This included the Rosalind Franklin building, named after the famous British scientist for her pioneering role in the discovery of DNA. The building comprise of three large 90-seater teaching laboratories where students are taught the key practical skills associated with their studies.

The participants were also introduced to various e-learning platforms and facilities currently in use at the University of Wolverhampton, to expand access and enhance students' learning experience. Web-based applications currently used to support teaching and learning include: WOLF- the Virtual Learning Environment (VLE) for staff and students; WIRE ((Wolverhampton Intellectual Repository and E-Theses) - the official digital repository of research work by academic staff and students at the University of Wolverhampton. They were also introduced to *Turnitin,* a web-based application for detection of plagiarism in student essays. In addition to these, there is e-vision- an information and management system which allows staff to work with a wide range of student information, and implement a more streamlined administration process. Furthermore, there is *PebblePAD*, which allows students and staff to create e-portfolios.

Drawing on the Wolverhampton experience, participants were encouraged to reflect and explore ways in which they can apply different e-learning facilities on different aspects of their curriculum design and delivery

Recommendations

Based on the training, the following recommendations were made to participating institutions:

1. Adoption of a national policy framework on e-learning in order to widen participation as well as maintain basic standards of quality across board.
2. Launch of a National Computer Project, for mass distribution of computers in the libraries and computer laboratories of publicly funded universities, using such criteria as current level of ICT resources, student population, and level of e-learning adoption
3. Adoption of suitable virtual learning environment (VLE) that is attuned to specific needs and strategic plans of individual institutions.
4. Establishment, in each institution, of e-learning resource units with the responsibility to provide training and ongoing technical support for staff members working with e-learning platforms.
5. Investment in high-end e-learning facilities (e.g. visualisation centres) that can be used for executive training and/or let out to Businesses that may benefit from the use of such facilities. This can be a part of the institution's income generating drive.

6. Establishment of regular contact and engagement with businesses and industry stakeholders- especially those in the ICT sub-sector- to tap into funding and sponsorship for new ICT infrastructure in HE institutions.

7. Investment of resources in online student portal and digital courseware such as digital textbook, curricula and reference materials, in order to enhance the learning experience of students.

8. Investment in online repository for educational materials and tools for content development and course management.

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