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MAPPING AND DEVELOPING AN E-CONTENT AT A UNIVERSITY IN UGANDA

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Abstract

A good e-content is central in the success of any given learning management system enterprise, yet it is the pedagogy that is poorly understood. This is one reason why it is often experienced as problematic, especially by new developers and users. To highlight these concerns, in this paper I delineate a map of e-content development at Makerere University – a Partnership for Higher Education Africa Education Technology Initiative (PHEA ETI) that support e-learning as a tool for empowerment and development in Uganda (Africa) which are informed by contemporary theories in education. I will attempt to show traces on the design, development, application and evaluation of the current e-content project at Makerere University. The focus of this analysis is view that e-content development is a complex and unstable process, one filled with pleasures and challenges. This view is potentially useful for informing the practices of e-content developers, learners and learning management enthusiasts who work with them.

Key words: e-Learning, Learning Management Systems, e-courses, e-content, networks, technologies, learning theory.

Introduction

The Makerere University's rather new experience in systemic and unified e-Content development can be summed rewarding and challenging. Recently introduced as one of the tools for empowerment and development in Africa, the e-Content project is one of the three initiatives by PHEA ETI at Makerere University. The initiative according to its proposers is approached from the social critical realist standpoint (Williams, Wickham, Mawoyo, Brown and Kafanabo, 2010). They draw their perspective from Carter and New explanation that: "Social realism holds to the view that the project of imperial research in the social sciences is to investigate social phenomena in order to discover underlying casual processes" (2004:1).

Indeed the *modus operandi* for PHEA ETI locus is an enhanced institutional effectiveness, with in easy reach, and a protracted reputation. This is where the e-Content project at Makerere draws its main focus of providing quality content to the increasing numbers of students. Makerere University it was proposed needed to address the current challenges associated with the development and management of e-content in it teaching and learning environment. Key amongst these challenges was the lack of high quality e-content and the lack of capacity of staff in the development and use of such materials. Newly created e-content will be moved onto the Moodle Learning Management System in order to reach a larger audience at a cheaper cost than was previously possible using traditional methodologies.

It was initially proposed that three staff members from four faculties (4 participants per faculty from the Faculties of Science, Education, Health Science and Gender) will be selected to participate in the project. Their selection was to be based on an analysis of courses in terms of their suitability for e-content development and the numbers of student currently registered for the courses. Building staff capacity in both the use of Makerere University Elearning Learning (MUELE) platform and the design of e-content materials was key to the success of the project. Undeniably careful documentation of processes followed in the development and utilization of the e-content have ensured that experiences are reflected on and lessons learnt shared by a wider audience. The introduction of Moodle platform came on as a relief after the University had struggled to maintain the services offered by the Blackboard. Ideas of Moodle have been well explained in Cole and Foster (2008).

While developments in distance education in Uganda (Africa), especially in higher institutions of learning have taken deep roots and the numbers of students in the programme expanded, the development of e-Content in such institutions has not been easy and smooth. Despite the fact that Uganda universities have been developing tools for the distance learner the course materials development continue to pose a challenge. For Aguti (2005) the development of the virtual university goes back to the 1990s and yet the beneficiaries had not made a substantial leverage.

Different views about the relationship between technology and society influence approaches to and activities using educational technology. It is on the outlook that Brey (2003) outlines views of the relationship between technology and society as being that of social transformer where it affects social relations, organisational structures, beliefs, experiences and meanings. Based on this assumption about the relationship between technology and society, learning and teaching activities are driven by technological concerns.

In the current project, we have the assumptions that technology is socially shaped: technology is society made durable and with this view, pedagogy is central and drives the use of technology for teaching and learning. Technology and society are co-constructed - they are not separate structures or forces but are deeply inter-woven. For this view, technology is dialectically related to education. Learning is driven by educational goals and technology opens up new

opportunities for learning and teaching activities. Change is not linear, but proceeds by variation and selection, meanings, functions and content are constantly open to negotiation (Brey, 2003).

It then our project will draw from Rosenberg (2006) who posits that, e-learning will become more than "e-training", move to the workplace. Blended learning will be redefined, be less course-centric and more knowledge-centric, adapt differently to different levels of mastery and technology will become a secondary issue a line that the e-content project at Makerere would like to take. In our approach to technology, we want to take on the state-of-the-actual rather than state-of-the-art in our line of thinking to draw from Selwyn (2010) recent position.

Support for E-Technology at Makerere University

The University's Information and Communication Technology Policy (2009), prepared in 2001, notes that ICT can and will change the way in which an institution of higher education functions. Implementation of ICT is not simply an introduction of new technology, but a complete rethinking of how the institution's functions are achieved. Success only comes when people are able and willing to change (renew) their working habits and thinking processes. Without this change of thinking and doing when new technology or new ICT services are implemented, technical success is likely to be accompanied by organizational failure. With this in mind, the vision for ICT at Makerere University stands as: "University-wide access to, and utilization of information and communication technology to enhance the position of Makerere University as a centre of academic excellence, and its contribution to the sustainable development of society".

The implementation of the Makerere ICT Project has taken full cognisance of the need for full stakeholder involvement and ownership. The continuing complexity of the process of integration of ICT in all organizational functions in a major institution like Makerere – demand a competent human resource and time. The challenges of sustainability – recurrent and replacement costs have to be met by the University, and acquisitions have to take this into account, the fact that infrastructure is a common challenge for all ICT projects. An awareness of the limited funding available from Makerere University due to multiple demands on inadequate resources and the fact that most development partners will be able to support only parts of the master plan. These have been further stratified under the technical aspect (*under DICTS – Directorate of Information Communication Technology Support*), the pedagogical and andragogical aspects (*under the IACE – Institute of Adult and Continuing Education*).

There are issues that support and hinder the development and adoption of new ideas in any community or organisation. For Makerere experience, the community at some degree has always embraced changes. There are however social structures that help to support or reject such changes. This can be taken on Archer's notion that uncovers the 'distributions, roles, organization, or institutions, and …cultural emergent properties such as propositions, theories and doctrines (2003) that may hinder lecturers' adopting of educational technology into their pedagogic practices.

Applying Some Learning Theories to E-Content

It was thought prudent to include some learning theories as we develop and quality assured the selected courses to be uploaded on the learning platform. The conception of new ideas in learning could not go without the need for allowing the basic learning behaviours of the target learners. It was indeed the wish of the project to set some basis of sharing knowledge basing on established learning theories. Right from behaviouralist, that can be traced back to Aristotle but that Pavlov, Watson, Thorndike and Skinner later developed the theory in more detail. Watson is the theorist credited with coining the term "behaviourism".

Another of the theories was constructivist that dwells on the cultural environment in which learning takes place. Isolated learning is an oxymoron. Merriam and Caffarella (1999) suggest that adult learning, while self-directed, must have input from outside influences. That may take the form of investigation, social interaction, or more formal learning environments. Post-modern or postmodernism, in the context of adult learning, could also be beneficial to first understand that the postmodern movement is much larger than adult learning. It is inclusive of a wide variety of disciplines and areas of study including art, architecture, music, film, literature, sociology, communications, fashion, technology, and education (Klages, 2003).

And lastly there was a need to include adult learning theories that encompass the basic concepts of behavioural change and experience. Yet from there, complexities begin to diverge specific theories and concepts in eclectic borage of inferences. Up to until the 1950's basic definitions of learning were built around the idea of change in behaviour (Merriam and Caffarella, 1999). Coupled with this was a need by course developers to include notional hours in the various e-Contents developed. While in the beginning it received various reactions for its inclusion, it has gradually been accepted by most of the participants. This was partly to ensure the quality of the content delivered. The project had to tackle the issued of quality assurance. A team of local external experts have been involved in this rather new exercise introduced by the university in the recent times. It is hoped it will create a perfect solution for E-Content delivery, access control and an attractive learning model (www.ydp.eu).

What We Set Out to Achieve?

The e-content project was launched in February 2010 with the funding from PHEA ETI. As the project name suggests it object was to initiate, transform and make available a user friendly e-content within the Makerere University e-learning platforms.

The project set out to pilot four Makerere University units namely; Science, Gender, Education and Health Sciences. In addition there was decision to include IACE a critical unit which was thought would benefit since its mandate largely deals with distance education – which is kind of semi virtual programme. We had identified at most two

courses from each unit selected. The basis for selection considered the student's enrolment on that course, the number of lecturers on the course(s), the course structure and content and the possible component of the course to develop the e-content. In addition to the above, it was critical to understand the levels of accessibility but also the readiness for their participation.

The following are what units had come up with. Education - Teaching the Morphology of Luganda, Teaching and Learning Chemistry, Educational Technology; Gender - Gender and ICT and CCA for content development ; Science - Electricity and Magnetism, Waves and Optics, College of Health Science (CHS) – Medical Ethics, Cost Effectiveness Analysis; and Institute of Adult and Continuing Education (IACE) – Information technology II, Information technology I.

While it was easy to think that every programme (course) could be uploaded on the e-platform, there was need to have a rationale as to why such course should be prioritised. The following courses had been identified as priority - Gender and ICT, Electricity and Magnetism and Medical Ethics. Within the very units the team leaders were tasked to identify and engage other participants who would help to create a form or rapport for purposes of continuity and general project expansion. These unit teams were identified by the unit representatives in conjunction in the general university leadership. This was meant to attract individuals who support and encourage new innovations and were ready to expand and or learn and integrate the kind of objects as set out in the project.

In total the project was able to recruit eighteen individuals that are spread through out the various units. A special consideration had been placed on Education and therefore it attracted the largest number of participants. These include persons with background in e-learning, pedagogy and curriculum development. As planned these unit were rolled out in a kind of phased approach for it would have been difficult to enlist everyone at the same time. The exercise was both challenging and exciting. The kinds of human resource at Makerere University that is composed of both young and the elderly was one of them.

While the issue of e-content accessibility was continuously being approved by many, there seem to be a generic 'not sure' attitude towards its total usage. Yet as the teams will suggest there was increased hope in having a system that was easily accessible to ever increasing numbers of learners at the institutes of higher learning.

The willingness to participate in this project has been enormous. Given the enthusiasm so far exhibited by the present participating teams and individuals, there great opportunity to have the project object appreciated. As part of the project activities set out in the initial proposition, we are happy to announce that the project has been fast tracked to accommodate all the anticipated activities. For this we are grateful to our working partners who have dedicated their inputs and time to make the project move.

Project Yields
The following outputs had been anticipated:
1. A report identifying eight courses that lend themselves to conversion to e-courses and staff to lead the development of the materials. This report will also indicate the programmes of study and the categories of students involved.
2. An overview map/document of the eight courses to be converted into e-courses with details on the scope (notional hours), outcomes, content, methodology, assessment strategy etc. to guide the development of the materials.
3. 160 notional hours within the 4 faculties of e-courseware and accompanying e-content, student activities and assessment tasks.
4. An evaluation report with recommendations for revisions to improve e-courses and e-content that reflects the needs of students and staff after development of the first round of courses has been completed.
5. Institutional guidelines for setting up and designing e-courses.
6. Twenty well trained staff members across five faculties. These staff members will provide for a network of academics that can collaborate with other colleagues on future projects relevant to teaching using e-content and a LMS.
7. A conference paper.

The project has been running for ten months. In order to concretize the main foci of the project, it has deemed useful to involve users fully at all levels of activity – issues of quality assurance, design and course development have been central in the just ended phase. In addition is the need to continuously put emphasis on the university mission, organizational growth, and outreach. For implementation of the project, it critical that issues that support education technology consider the technology support for instructional and administrative processes, student access to computers (including personal computers), the unit's use of technology in current instructional programs, technological competence of students, technological competence of faculty, conception of new technologically mediated instructional programs, on-line student services, on-line student enrolment/marketing, and technological competence for unit administrators.

We have allowed individuals and units to flagship their own courses of interest. The basis for this was simply to reward those individual and teams that were active in the e-content project. In addition to the above, it is essential to understand the levels of accessibility but also the readiness for their participation. Below are what units have managed to put their course live. The above courses have been identified as priority – but still encouragement should go to Gender and ICT, education and Medical Ethics.

One other new idea is the case of the Library which we are happy to have developed a draft copy of Library guide to be used by new and any other library users. It is proposed that these would be generated on CDs and can be uploaded on to the general library portal. The draft was made live by December but needs some kind of design input.

The project geared at developing all kinds of interfaces including but not limited to audio and video capabilities have proved popular in e-content development elsewhere. A case in point is the Library Guide. This is hoped to be the project flagship.

Activity participation for the first six months are summarised below:

Activity schedule	Responsibility	Participation levels 100%
Identification of project coordinating team and faculty teams	e-Learning Unit	100
Brief faculty teams on process to be followed in the analysis of programmes in order to identify courses and staff for inclusion in the project	Project coordinating team	100
Analysis of programmes in order to identify courses and staff for inclusion in the project.	Faculty teams with assistance from project teams	100
Write report on the above.	Faculty teams	
First workshop on e-content design	CET-SAIDE	100
Mapping of e-content to be developed in courses identified (Gender and ICT, Electricity and Magnetism and Medical Ethics)	Faculty teams with assistance from project coordinating team and CET-SAIDE	95
Second workshop on e-content design	CET-SAIDE	100
Development of course materials	Faculty teams, project coordinating team and CET-SAIDE	95

The E-Content fine tuning and deployment phase:

Activity schedule	Responsibility	Participation in Percentage
Mapping of e-Content to be developed for courses	e-Learning Unit	100
Second workshop on e-content design and development	CET-SAIDE and Project coordinating team	100
Content authoring, development of 1st drafts by experts	Faculty teams with assistance from project teams and quality assurance	95
Draft evaluation tools for the designed and quality assured courses	e-Content team and quality assurance experts	100
Learning and assessment activities for e-content with focus on outcomes, content, notional hours, etc	CET-SAIDE, faculty teams and individuals	100
Staff workshops on designing and teaching using e-content	e-Content team, Design experts and e-learning	100
Run courses in MUELE by participating units and teams	Faculty teams with assistance from project coordinating team and CET-SAIDE	Nine (9) so far done and more in pipeline

A Summary Some Issues Experienced

Because of the delays in the initial releases, there was rather a rush in catching up with the first activities. There were complaints by some units that could not go with the rest of the teams. For this, we lost some track with some members from CHS.

There was delay in securing equipment – and finally when the equipment arrived, it lacked the relevant software. This was however solved and the design training went smoothly.

Since most of the participating members and units are part of the university, it was not always easy to have the course writing and designing as easy as had been anticipated. For this training and course writing had to take in considerations from the participating individuals' schedules.

The project second phase activity projections have been largely over crowded due to the tight deadlines set out. But the majority of the fast tracking of the project has been absorbed in the two phases. Thus the upcoming phases will run as previously projected.

Conclusion

The experience of e-Content development at Makerere University provides a precursor to the extent to which distance education initiatives and efforts to use technology in education are being used to impact on learners and the broader communities of which they are part. Importantly, the project thought still its infancy, has demonstrated that Uganda's (African) experiences that have been largely positive – have global relevance that other communities can learn from. The content project which largely focuses on the design, development, application and evaluation of distance education systems, methods and applications of technology/media can hope to its set objects of setting up an easy and intuitive delivery platform with supporting tools for content management and presentation.

Whatever difficulties, challenges and reservations, models in learning that include LMS (Learning Management Systems), are here to stay as are the new breed of learners. It the community of educators (e-Content developers) here represented together with other stakeholders who will enhance that process over time. The e-Content here discussed is under continuous change and development.

In the next five to ten years more courses would have been mounted using the e-learning platforms, while there are still some limitation with other universities and institutes of higher education in Uganda, there are likely to have some few department in these institutions developing their own online course especially when most universities worldwide have already embraced the kind of education to the ever increasing population. Cities in Uganda and elsewhere are finding it worthwhile to have such undertaking.

In Uganda the traditional methods of classroom/lecture room will continue since the levels of availability of both hard and software are still a challenge. While the Makerere case started with Blackboard, the expenses involved could not be sustained. The new version of MUELE which adopted from Moodle is a free platform and in a way has been key to the success of the present project.

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