

Factors that Impede Adoption of E-learning in Developing Countries: Advice for Moving Beyond Challenges with Integrating E-learning Platforms at Polytechnic of Namibia

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ABSTRACT

This paper examines factors that impede adoption of e-learning in developing countries and proposes strategies for African universities interested in overcoming the challenges posed by technology integration. The findings reveal that when content learning is integral to e-learning, it has the potential to support increased e-learning outcomes, especially if lecturers at the Polytechnic of Namibia align their teaching strategies with many of the goals of Vision 2030 and the Millennium Development Goals. The Polytechnic of Namibia has its own strategic goals for 2013, which are aligned with Vision 2030. Polytechnic's 5-year strategic goals focus on accessibility, technical support and resource allocation. Polytechnic lecturers provided insight into e-learning benefits and challenges, which lead to recommendations that can be generalized for institutions in developing countries.

Introduction

Within the last decade, universities and academic institutions in Western economies have been successful at integrating e-learning systems across disciplines. In the late 1990's, Blackboard and WebCT were preferred systems for university professors teaching Education, Communication and in other fields (Chotiner, 2007). In many ways, it is still used by many institutions across the United States and Europe. While Blackboard and WebCT have gained notoriety in the West, many developing countries have decided to take one of two routes with regard to integrating e-learning systems: One is to use mainstream online systems or take advantage of inexpensive open source e-learning programs such as Moodle and KEWL (Keats, 2003; McMullin & Munro, 2004).

Developing countries are also experiencing an influx of Information Communication Technologies (ICTs) in all areas of life that are propelling them for global competitiveness. The impact of ICTs has benefited industries throughout Africa but it is also important to note that ICTs have huge potential to galvanize tertiary education (Beebe, 2002). The drive to integrate ICTs throughout many developing countries is supported on national and regional levels; particularly in Namibia, tertiary institutions such as the Polytechnic of Namibia (www.polytechnic.edu.na) support implementation of ICTs through their five-year Strategic Plan and the overall national coordinating entity, which is NOLNET (Beukes-Amiss, 2006). More specifically, Polytechnic's Strategic Plan strongly proposes that academic offerings in distance education mode will be expanded significantly within five years. The strategic document emphasizes that 50% of academic courses will be available online by 2013, providing increased flexibility of access and fostering life-long learning. However, it is important to note that such goals are challenged by lack of resources, technical support and Internet accessibility.

Millennium Development Goals for Africa (MDGs)

The Millennium Development Goals for Africa clearly proposes to eradicate poverty, illiteracy and increase employment by 2015, which will result in increased productivity throughout Africa. While this remains true, the goal achievement faces many challenges with regard to increasing education and access for all people. A report summary published in 2008 (UN Department of Public Information, 2008), acknowledges the following, "the goals from many African countries are off track (pg. 1)." Thus, education at all levels still remains problematic; however, as educators who have adapted to the technologically enhanced learning environment, we believe that goal achievement can be accelerated through the integration of fully-fledged e-learning platforms.

Vision 2030

While Vision 2030 does not explicitly promote e-learning as a method that schools and universities should embrace, it is important to recognize its impact for education reform. The broad strategies of Vision 2030 plainly state that

“in order to realize the objectives of Vision 2030, the following strategic elements should be considered in the long term perspective plan for Namibia... thus providing full and appropriate education at all levels (pg. 41).” While education is an important aspect to learning, there are still many challenges that impede quality education such as lack of ICT awareness, distances across regions, align of education and schools and language proficiency, etc. Each country therefore needs a well articulated ICT Policy, Action Plans and Implementation Plans, which are similar to Namibia’s ICT Policy & Plan.

As educators, we believe e-learning would provide access to quality education and fill the gap of the Vision 2030 strategies. One of the primary avenues to e-learning success is the integration of either mainstream or open source platforms. Regardless of the platform selected by an institution, it should be noted that open source platforms have the same academic potential as WebCT or Blackboard, especially if pedagogical values are taken into account (Zake, 2008).

Platforms that Support E-learning

Moodle and KEWL are two platforms that support e-learning at the Polytechnic of Namibia. Historically, Moodle (see <http://moodle.com/> for more information) was the preferred platform from 2005. Moodle is a course management system designed to help educators who want to create quality online courses. The software is used all over the world by universities, schools, companies and independent teachers. Moodle is open source and completely free to use. After Moodle was used for several years at the Polytechnic, consultation with various Namibian stakeholders ensued and a decision was made to adopt the platform Knowledge Environment for Web-based Learning (also known as KEWL). KEWL (see <http://kewl.uwc.ac.za> for more information) is an open source online-learning management system customized by an e-learning centre for Namibia. The platform implementation process was initiated by the Ministry of Education and Office of the Prime Minister in 2005, starting with the University of Namibia. It is supported and facilitated by InWent a German Capacity Building Institution with sixteen other stakeholders in Namibia (www.unam.na). These stakeholders include public and private partners. According to Beukes-Amis (2006), the initial project supported by InWent and NOLNet provided encouragement for lecturers and the following training courses:

- Instructional Design
- Content Development
- E-Learning Management
- Support of Virtual Learning Communities

While open source platforms are free and available for easy download, there are many challenges that impede proper implementation of e-learning. During intense discussions with lecturers at the Polytechnic of Namibia it was revealed that in their experience, e-learning platforms enhance facilitation of content across the disciplines yet challenges still persist. According to individual responses to research questions, interviewers recorded the following:

What is the effectiveness in facilitation of academic content?

- L1¹ Depends on subject. Practical subjects (courses) may not be effective. More effective for theory based subjects.
- L2² Staff does not have time and therefore e-platforms provide for flexibility in learning. Lecturer uses it to facilitate content, discussion forums, group activities, e-tutoring and group work. Setting activities to facilitate-learning, e.g rubrics, and peer evaluation process. Many lecturers use the system to post lecture notes providing easy access to learning materials.
- L3³ Only uses discussion forums. Deliver content through content pages.
- L4⁴ No response on this question.

¹ Lecturer in IT

² Lecturer in CTL (Center for Teaching and Learning)

³ Lecturer in Department of Communication

⁴ Dean, School of Communication

What is the effectiveness in interactivity between facilitator & student? How can interactivity be improved between facilitator and students?

- L1 Face to face facilitation more effective than self paced. The lecturers would consider blocking off time to allow for face to face sessions. Works better with part time students than full time students. Tell students that interaction sessions are set up. Lecturer has not been able to use this suggestion but I will consider the possibility of implementing suggestions in the future.
- L2 Give tests that are multiple-choice questions. Engage in chats and structured discussion activities. It is not easy to come up with activities and therefore necessary to continuously monitor online interactions. This process holds lecturers interest in the course.
- L3 Students can contact the facilitator, read each other's comments on discussion boards and comment on each other's tasks. Rationale is to develop processes, discuss past experiences and review expectations about the course. The process increases analytical skills, presentation skills, debate and critical thinking skills. Online course encourages self-motivated learning that compliments face-to-face-learning. Motivates lecturers to come up with goals for online platforms e.g., responses, post notes, calculate marks and grades.

What is the effectiveness in interactivity between student & student?

- L1 Before engaging students in an online experience, there should be rules and ethics. There should be focus on specific content for learning. Structured learning may not be possible when they seek to interact with each other in different classes. The setup could include student-to-student interaction—first inform the students of the rules then students can interact at any time. The structured sessions are best. An example is to present an IT-related case.

What is the effectiveness in interactivity between learner & subject matter expert?

- L1 Students and subject matter experts interaction requires more facilitation. Big classes should be managed with co-lecturers or assistants with online help accessibility.
- L2 Students can submit questions on the subject matter.

What is the rate of academic usability of Moodle (i.e. effectiveness)?

- L1 Usability for KEWL and Moodle rated as fifty percent each. Full functionality/ capacity has not been realised even after facilitators have received training. Lecturers typically post notes, homework and no graphics, testing, calendar or other features used.
- L3 For the Dept of Communication, Moodle is 50% perceived academic usability.

What is the rate of academic usability of KEWL (i.e. effectiveness)?

- L1 Large classes are not manageable, time consuming. Moodle more suited for smaller groups if class is more than 100 students.
- L3 KEWL is 25% while each platform is rated 70% for the whole School of Communication. Functionality of KEWL requires more work and therefore less lecturers use it compared to Moodle.
- L4 Both Moodle and KEWL is 70% each for the whole School of Communication

Challenges of Implementing E-learning

There are many reasons why lectures at the Polytechnic of Namibia do not integrate e-learning platforms for teaching and learning such as Moodle and KEWL. One reason points to the non-availability of an official Policy that regulates development and implementation of e-learning within Namibia's tertiary institutions. To add to this challenge, there is also not a monitoring and evaluation system for implementation of using such platforms. A

colleague at the Polytechnic who closely works with Moodle and KEWL as an e-learning support staff member explicated this idea through an on-line survey. She said, “We [NoI Net Elc] have a standing committee which oversees and supports e-learning in all the stakeholders of NoI Net. They provide training in e-learning and are involved in policy making with regard to e-learning.” She further says, “Both [Moodle/KEWL] have been successful at supporting classroom based teaching. Their full potential has not been tapped due to the lack of a policy and implementation plan, low bandwidth and students not having regular access to computers and the Internet.”

What are the benefits and challenges?

- L1 One of the benefits is that everything is in one place; it is easy to communicate with everyone and it also easy to give feedback in time.
- L3 Technical challenges – Internet slow, no technician support designated for the School of Communication. KEWL requires two to three technicians to help log in students and is problematic.
- L4 Students can access online answers to question, cut and paste answers to improve English proficiency. Technical challenges – (i) Internet slow, no technician support designated for the School of Communication; (ii) Time pressure on the part of the student; (iii) Computers not always available. With Moodle they finish assignment and ask for more work within the two hours. With so many problems and complications the students become frustrated and de-motivated.

To add to the e-learning support staff member’s comments, Beukes-Amiss (2006) suggests that key success factors impede adoption of e-learning:

- *Top Management Buy-in*
- *Scarce resources but willing to work with existing infrastructure*
- *Sharing of content – Open license agreement*
- *Quality Assurance at various levels*
- *Existing e-content evaluation*

While our research does not explore all areas listed above, we believe they are important aspects that should be further investigated.

When designing learning activities, facilitators need not only be aware of the challenges that impede implementation of e-learning but should also take cognisance of the different ways learning can be enhanced. The model below displays ways in which e-learning can be enhanced through various activities (see Figure 1).

The online active learning model combines different learning theories to form a 3-dimensional approach to effective e-learning, which is divided into the areas of passive and active learning. This model can be used during e-learning workshops that instruct lecturers on how to integrate activities online.

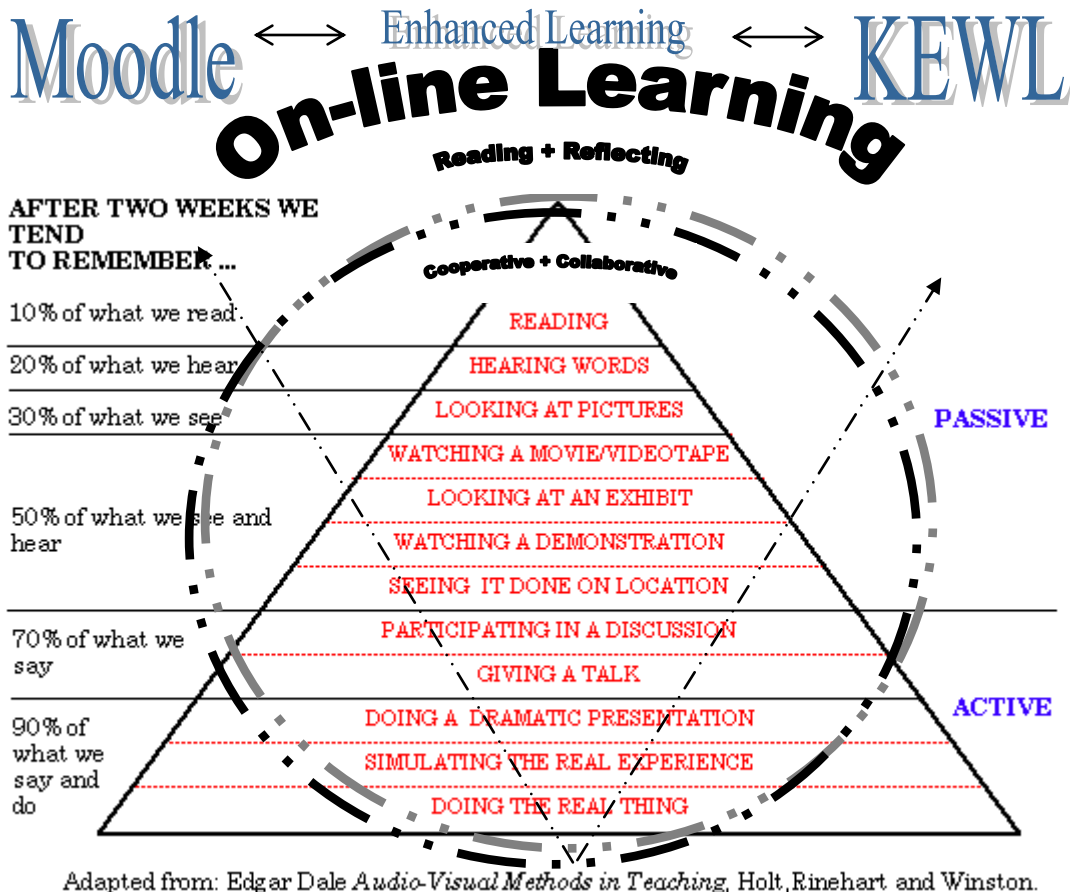


Figure 1.
Three dimensional model for (Online) Active-learning: An Active-learning Model
(Adapted from Edgar Dale *Audio-Visual Methods in Teaching*, 1969)

Research Data Collection and Findings

Over a 2-month period, the data collection process consisted of a general on-line survey published on www.surveymonkey.com. Polytechnic of Namibia lecturers who worked with either Moodle or KEWL for more than 2 years, were invited to participate and complete an on-line survey about their experiences with e-learning platforms. The initial process was supported through a pilot study, which provided an opportunity to gather previous experiences relating to the effectiveness of learning using Moodle or KEWL. The pilot project only touched the surface of this research; however, in the future, we plan to collect detailed information and interviews relating to students' interactions and level of learning using Moodle or KEWL.

The findings from the pilot study revealed that lecturers have the motivation and the drive to integrate e-learning into academic activities. However, limited resources prevent effective adoption and integration of e-learning by many lecturers at the Polytechnic. In order to encourage transfer of learning, it is important for organisations and academic institutions to offer incentive and allow lecturers time to explore, interact and collaborate with international partners to solidify the development of e-learning systems and overcome challenges posed by lecturers who are novices. Data collected showed that the propensity to have positive results between the facilitator and learner is greatest when the lecturer to student ratio is low.

While vision 2030 and Millennium Development goals are essential to guide educational reform, it is also important to recognize that whenever academicians use e-learning as a viable education tool, it accelerates access, effective-learning across disciplines, fills the gap for goal achievement and encourages sustainable life long learning. Based on our discussion with various lectures it is evident that e-learning is integral to Polytechnic strategic plans for 2008-2013. However challenges still persist. Lecturers are using e-learning platforms, but, there is still a great need to motivate and increase academic usage. In order to increase e-learning from 25% to targeted strategic goals

of 50% we recommend that Polytechnic and other institutions in developing countries adopt the recommendations below and ensure sustainability of academic usability.

Recommendations

As educators who strongly support the integration of e-learning at various levels within a institutions, we recommend the following advice for lecturers who want to move beyond challenges with integrating e-learning platforms into their courses.

1. Instead of training staff to use different e-learning platforms, institutions should standardized one specific platform (open source or otherwise) to be used by all lecturers.
2. Offer a blended or hybrid approach to teaching and learning. Encourage lecturers to slowly infuse the two platforms into curriculum.
3. Tertiary institutions in developing countries should have incentives to encourage adoption and integration of e-learning academic activities. Also, academicians should develop online portfolios for sharing, recognition and promotion (Magnoler, 2003).
4. Team teaching should be encouraged where proficient members of staff team up with less experienced colleagues for a period of 3 to 6 months to gain mastery expertise regarding e-learning systems.
5. E-learning network systems between developed and developing countries should be adopted and instituted for academicians from developing and developed countries. Through this mechanism, colleagues from developed countries will be able to receive guidance, mentorship, and support; also, they will be able to discuss and share ideas with colleagues from developed countries for bench marking and best practices (Beebe, 2002).
6. Academicians from developing countries should organize and attend e-learning conferences and workshops for increased knowledge management. Examples of such conferences are: E-learning Africa (www.elearning-africa.com); International Conference on E-learning (www.academic-conferences.org); IST Africa Conference (www.ist-africa.org); E learn World Conference (www.aace.org).
7. E-learning change agents should be appointed in institutions of higher learning. These individuals will be responsible for in-house training of lecturers, attending conferences, workshops and engaging in research regarding e-learning.
8. A multi-interdisciplinary approach to designing and implementing a fully functional and user-friendly e learning system should be streamlined throughout an institution. For instance, a lecturer in Marketing could team-up with a lecturer from Software Engineering. The lecturer in Software Engineering could provide recommendations for a system's effectiveness and usability.
9. Developing countries should develop and implement ICT Policies to ensure political support, enhance capacity and sustainability (UNESCO, 2008).
10. Develop and nurture strategic partnerships where industry and academic collaborate to improve ICT computer access, which includes training and development (Intel Corporation, 2006).

Conclusion

The Polytechnic of Namibia is in the process of transforming into the preferred University of Science and Technology. A lot of academic activities are focused on integrating technology in every sphere of academic learning. Technology is an enabler in the transformation of many African institutions. As educators, we are mindful that challenges persist regarding full integration of e-learning for students. We further acknowledge that it is important to note that such institutions like the Polytechnic are beginning to overcome these challenges, in its own time. While it is important to recognize ICT related policies (e.g., Vision 2030 and the UN MDGs), many initiatives and goals that are based on these policies, would not be actualized unless academicians take heed of the recommendations for overcoming e-learning integration.

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