Challenges of Implementing Quality Assurance Systems in Blended Learning in Uganda: The Need for An Assessment Framework

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Abstract: *In order to deal with the increasing demand for higher education against acute shortages of academic staff and infrastructure in the growing numbers of institutions of higher learning, some of the campus-based face to face institutions are now turning to blended learning, "a convergence of distance learning and conventional learning," modes of delivery to their students in the campuses. This paper uses the case of Uganda in discussing issues confronting institutions of higher learning in their efforts to provide opportunity for the increasing demand for higher education while at the same time trying to maintain quality of instruction for large classes. The methodology employed in this study was entirely literature-based. Blended learning is described with examples of its application referenced to existing programmes at some universities. A discussion of the challenges of implementing quality assurance systems is included. The paper concludes with the need for an assessment framework and a summary of the plausible proposals for ensuring quality in the delivery blended learning.*

Keywords: Blended Learning, Quality Assurance, Assessment Framework, Uganda

INTRODUCTION

With the increasing demand for higher education against acute shortages of academic staff and infrastructure in the growing numbers of institutions of higher learning, some of the campus-based face to face programmes are being delivered through blended learning approaches as opposed to traditional learning methods. Traditional learning methods do not meet the contemporary needs of our information society any more (Gütl *et al.,* 2004). Traditionally learning was carried out in a designated place, at a particular time and by a known tutor. To exemplify this, Cross (2004) observes in Downes (2007) thus: "For sixty years, we've thought of learning as residing in the formal models exemplified by schools, universities, and training programs. Common to these top-down formats is a curriculum that rests on the beliefs and worldview of the authorities in charge." Advances in technology all over the world have contributed to the paradigm shift in several areas inclusive education. Today learning can occur everywhere due to the technological factors that have broken the geographical barriers to learning. Detecon and Diebold (2002) observe that the potential of e-technology for the developing countries is breathtaking, and the significance of this for e-learning is huge. Especially in Africa, the current status requires innovative ways to support education for all (UNESCO-IITE Report, 2003). Thus, technology-based solutions have been increasingly established to overcome these problems. The need to invent more

innovative ways of providing learning is being driven by the changing conditions and unique contexts in which learners find themselves (Devlin *et al*., 2001). The future direction of e-learning has been defined as "blended learning**"** (Mitchell, 2001).

DEFINITION OF BLENDED LEARNING

The dominant perception of blended learning is that it is a mix of media and modes (Adams *et al.,* 2006). This understanding forms the core of most blended learning definitions which usually state that blended learning is a combination of e-learning and face-to-face (F2F) delivery. Such perception is inadequate in that it does not indicate the educational process and decisions that inform and shape a blended learning approach and the subsequent skills and support needed to realize such an approach. Therefore, Rovai and Jordan (2004) suggest that:

> *"*Blended learning is a flexible approach to course design that supports the blending of different times and places for learning, offering some of the conveniences of fully online courses without the complete loss of face-to-face contact. The result is potentially a more robust educational experience than either traditional or fully online learning can offer."

However, some scholars - Matheos (2012); Akyol and Garrison (2011), through consultation with academic staff who have been involved in developing blended learning programmes, formulated their own working definition of blended learning. According to them, blended learning is considered to be:

> "The planned integration of learning and teaching methods that support learners in the achievement of learning outcomes through the provision of a range of learning experiences that accommodate different approaches to learning in a range of learning environments" (Adams, at el., 2006).

To date there is no consensus on a single agreed-upon definition for blended learning. However, the approach combines face to face classroom methods with computer-mediated activities to form an integrated instructional approach.

REASONS FOR BLENDING

Some scholars - Abel (2005); Akyol and Garrison (2011) believe that the fact that blended learning is an approach that adopts a mix of methods of instruction; then blended learning is as old as the education systems around the world. This is because even in traditional learning, teachers often apply more than one method of instruction especially when teaching students with mixed abilities. However, with the invention of technology and its application in teaching, blended learning seems to have taken on a modern definition. Various reasons have been advanced for institutions of higher learning taking on blended learning. In the case of Uganda, blended learning started to manifest after the Education White Paper of 1992 which provided several options for university entry due to increased demand for higher education in the country. This led to increased enrolments against limited staff, infrastructure, limited funding and teaching-learning materials. Makerere University - in particular, started Distance Education

programmes for Bachelor of Education and Bachelor of Commerce. These programmes combined face to face on campus teaching with individualized learning for the various students on course. Over time, several other universities (Kyambogo, Ndejje and Bugema) in the country also started programmes that embraced the blended learning approach.

Several other reasons have been advanced for the growing need for blended learning both in Uganda and elsewhere in the world. These include but not limited to:

- More effective pedagogy
- Increased convenience and access
- Increased cost effectiveness
- More increase in active learning strategies
- More learner-centered focus
- A greater emphasis on peer-to-peer learning
- A change in the way faculty allocate time for increased mentoring of individual students
- The possibility for interaction with remote expert or peer review of projects
- Learner convenience especially mature learners with commitment
- Social interaction and human touch in face-to-face class environment

METHODOLOGY

The methodology employed in this study was entirely literature-based research in which secondary data pertaining to the particular areas of interest were explored without having to go through the process of collecting data in the field. This theoretical analysis enabled selection and discussion of theoretical and descriptive material (Bryman, 2008), in the Ugandan context, and detailed comparison of concepts on blended learning in terms of their applicability.

SITUATION IN UGANDA

Currently, the Government of Uganda and Ministry of Education and Sports in particular, places a lot of emphasis on the use of technology in education. In the past five years, the Uganda Communications Commission supplied computers to several secondary schools and institutions. The SchoolNet and Cyber programmes have also given schools computers to be used in the teaching-learning process. Several other schools and institutions have acquired computers through other funding mechanisms. The schools are not only using possession of computers as a basis for advertisement but also as a means to promote the use of ICT in teaching and learning. Currently, some universities in Uganda (The International University of East Africa in Kasanga; Livingstone International University) now offer a laptop or a kindle to every first year student. Generally, many educational institutions in Uganda have adapted the use of technologies for enhancing the traditional classroom teaching. How the technology has been implemented varies from one institution to another depending on the goals of the institution and resources. For instance, Gayaza High School has online programmes where the students access instruction and coursework assignments from their teachers

and send their responses back to the teachers online. The growing demand for post-secondary education and the teacher-student ratio in Uganda has also encouraged the adoption of blended learning.

THE IMPLICATIONS OF ADOPTION OF BLENDED LEARNING

According to Hennessy and Onguko (2010), adoption of blended learning in Ugandan institutions of higher learning, or institutions in other countries such as Tanzania, Kenya and Botswana; comes with implications that may include but not limited to the following:

- Lecturers need training to acquire skills for integrating technology into their practice
- Need to appropriately design blended learning programmes
- Need for students' adequate skills to use technology
- Access to the Internet by learners crucial
- Need for proper assessment of the learning outcomes
- National Information & Communication Technology Policy

CHALLENGES OF IMPLEMENTING BLENDED LEARNING

Singh and Reed (2001) believe that blended learning focuses on optimizing achievement of learning objectives by applying the "right" learning technologies to match the "right" personal learning style to transfer the "right" skills to the "right" person at the "right" time. However, given that adoption of blended learning comes with implications means that there are several challenges that institutions have to resolve to successfully implement the approach. Research studies (Kajumbula and Tibaingana, 2009; Aguti, 2000; Bbuye, 2005) found out that some of the challenges that Ugandan institutions of higher learning face as they struggle to provide blended learning include:

- Finding the "right" blend
- Adapting to the increased demand on time
- Measuring the impact of blended learning environment
- Adapting the culture to accept blended learning environments
- Finding the appropriate model
- Having access to the appropriate infrastructure – internet, websites
- Ability for learners to use the technology
- Inconsistencies in power supply
- Interrupted network
- Quality assurance
- Poor management
- Lack of incentives
- Fear or lack of confidence in using the LMS & technology in general
- Slow network and shutdowns
- Technical support for students
- Students' limited technological skills and attitudes towards using online learning

QUALITY ASSURANCE PROCESSES AND PROCEDURES

From the list above, one of the challenges of implementing blended learning not only in Uganda but elsewhere in the world is quality assurance. However, what do we mean when we talk about quality in education? According to Gandhe (2009), quality is often defined as embracing effectiveness, efficiency and accountability. These terms have connotations with terms used in trade, commerce and industry. Education and higher education in particular, is much different in that every element therein - input, process and output - is a human being, which is a very complex and highly individualistic phenomenon. Therefore, effectiveness, efficiency and accountability in this case are hinged on personal life and achievement of the needs and aspirations of the beneficiaries. Hence quality in higher education is defined as "fitness for the purpose".

The following should be benchmarks to this effect:
- Exceptional high standards
- Perfection and consistency
- Fitness for purpose
- Value for money, and
- Transformation capabilities

Naturally, institutions must ensure that the blended learning solutions adhere to best practice both in terms of development methodologies and delivery techniques. According to Kajumbula and Tibaingana (2009) if institutions must ensure quality learning, the following are some of the important questions institutions should think about when adopting blended learning.

- How learning materials are currently designed and developed?
- What quality assessment processes are in place?
- Are any formal quality procedures in place?
- What guidelines and methodologies are in place for designing and developing learning?
- What is the policy for accessibility and usability?
- How are materials maintained and updated?

Assessment is the ongoing process of establishing clear, measurable expected outcomes of student learning; ensuring that students have sufficient opportunities to achieve those outcomes; systematically gathering, analyzing, and interpreting evidence to determine how well students learning matches the expectations and; using the resulting information to understand and improve student learning (Suskie, 2009). Assessment of the quality of blended learning experiences is no easy matter as technologies typically support only part of the learning processes that the learners engage in (Bertrand, 2010). Consequently, evaluating the contribution of the technologies in blended learning experiences requires well researched and designed methodologies sufficiently sensitive so as to recognize and acknowledge the relational nature of the technologies to the quality of learning. According to Entwistle *et al.,* (2002), there are several issues

institutions need to focus on in as far as quality assurance is concerned. These are presented in Figure 1.

From Figure 1, it is apparent that institutions of higher learning need to focus on several aspects in the learning process in order to appropriately assess and ensure quality of learning in blended learning. While the need for assessment is clear; i.e. as noted by Suskie (2009); an implementation gap exists between the desired outcomes and how institutions ought to get there.
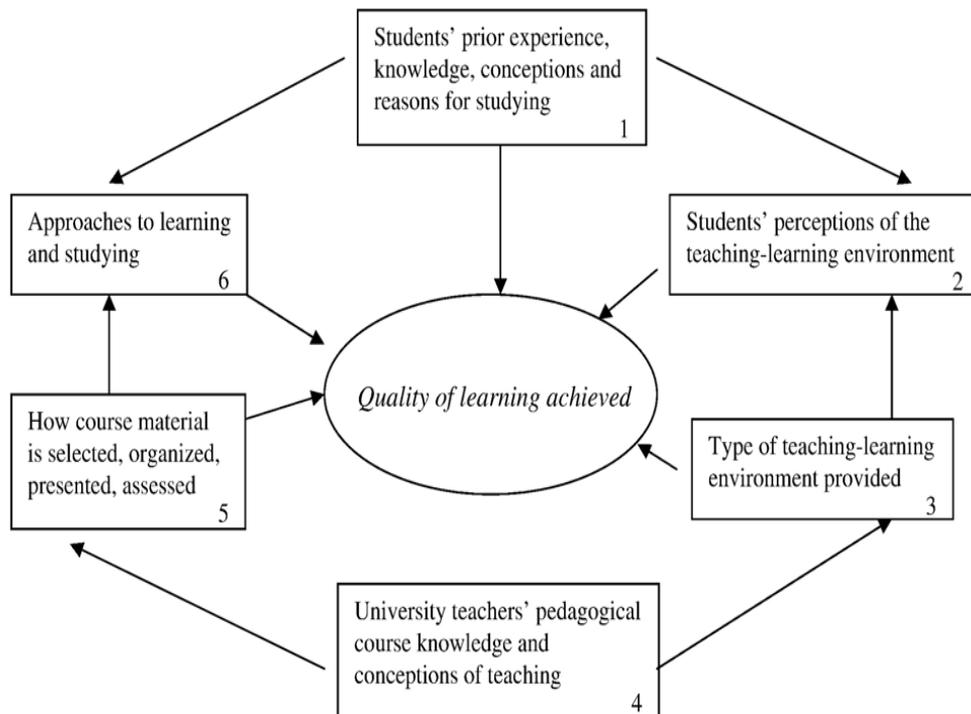
Source: Entwistle *et al.* (2002)
Figure 1: Concepts related to the quality of learning at university

This gap presents challenges for institutions in Uganda (and perhaps many other developing countries like Tanzania) from developing an effective assessment plan that could yield meaningful data about the learners, course, programme and the institution. The breadth and width of the gap varies from institution to institution.

Therefore, this paper proposes the need for an Assessment Framework to fill the assessment information gap by defining an assessment vocabulary, outlining a practical assessment implementation process, and establishing a methodology of how to use assessment data in an integrated fashion across institutions in the country.

This could be through each institution considering to design an assessment framework or the National Council for Higher Education (NCHE- accrediting body) adopting a general framework that would ensure quality learning outcomes across all institutions of

higher learning. The framework should address quality of the "learning outcomes" in blended learning through the development of reliable and valid scales, and link these aspects of quality of the "learning outcomes" to the "whole" of the learner experiences by investigating the relations of these scales with learners' approaches to learning across the entire course, as well as the overall grade (Bertrand, 2010).

An Assessment Framework is important for the range of stakeholders with interests in the performance of a college. Figure 2 illustrates the variety of stakeholders associated with a community college or university.
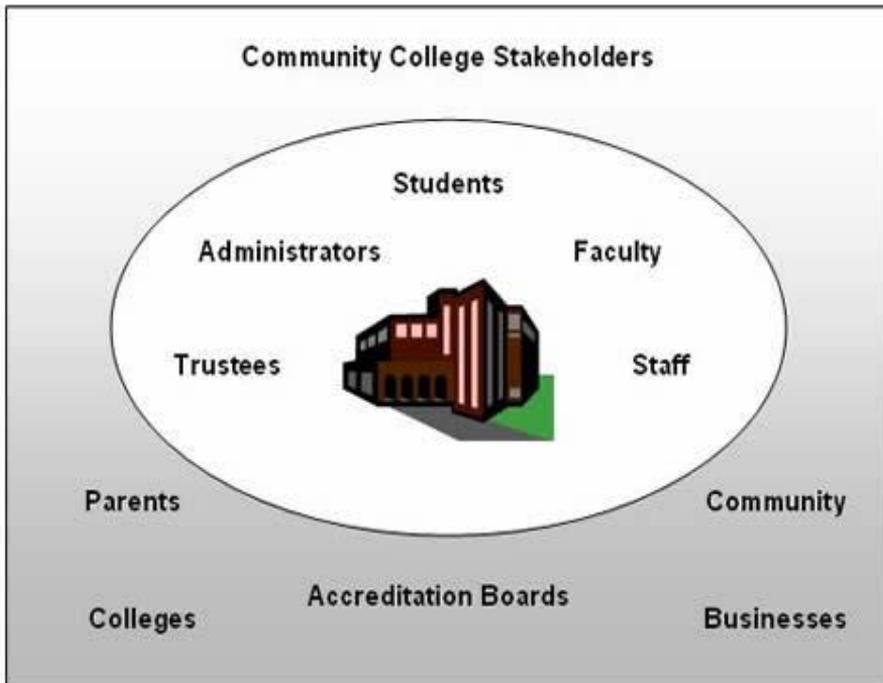

Figure 2: Stakeholders associated with a Community College
Source: Bersin (2004*)*

Figure 2 illustrates the number of stakeholders with an interest in the performance of an institution. All stakeholders have a need and right to receive and understand effectiveness indicators. Given the range of stakeholders, the institutional performance data need to be packaged and presented in a clear, concise, and precise fashion. The other primary goal for the Assessment Framework is to establish a vocabulary of assessment terms so that all stakeholders may easily understand data presentation on learning effectiveness. In addition, the Assessment Framework aims to outline a process for measuring student learning that all stakeholders will be able to understand. Clearness of language and transparency of process are critical to the success of any organization and perhaps even more important in a college setting where stakeholder interests are so varied and diverse.

A typical assessment framework (Standahl, 2008) should focus on the following:

- Defined measurable institutional learning outcomes. Establish outcomes at the institutional, program, major, course, and classroom level.
- Designed assessments to measure learning outcomes. Determine the outcomes to measure, determine the purpose for the assessment, determine the assessment method to employ, and determine the kind of assessment data you need to collect.
- Designed learning events based upon learning outcomes. Include assessment activities within the learning designs.
- Delivered learning.
- Assessment of learning and learning events.
- Gathering and formatting data generated from assessment activities.
- Interpretation of the assessment data.
- Use assessment data to make decisions at the student, classroom, course, major, program, or institutional level.

GUIDELINES TO THE CHOICE OF AN ASSESSMENT FRAMEWORK

Assessment and learning objectives are intimately connected so one useful framework for considering both is Bloom's Taxonomy (Bloom, 1956), a hierarchical classification of the different objectives that are typically set for learners. In choosing blended learning approaches for assessment, it is important to revisit the institutional course learning objectives and consider the nature of what it is that the institution wants the learners to demonstrate. To this effect, the institution should first consider the following:

- How will (should) learners use the knowledge and/or skills gained in the course in the real-world?
- What will learners be doing in the course; that is, what are the learning activities I have designed?
- What needs to be assessed, and why (i.e., knowledge, skills, attitudes, etc)?

Other things to consider may include:

- Can the institution provide opportunities for self-assessment, particularly of knowledge?
- Can the institution provide 'low stakes' assessment (e.g., a quiz) to guide the learner and provide feedback?
- How will the institution provide feedback on progress and what is the nature and timing of feedback?
- Are there opportunities for both informal and formal feedback?
- How consistent are the types of assessment with the types of learning activities?
- Do the assessment tasks align with the course aims and intended learning objectives?
- What are the workload implications for staff and students?
- Are there skills that need to be developed in order to use the technology?
- Will implementing a blended learning strategy create more workload or can it be made more efficient?
- How will the institution communicate the purpose and relevance of tasks to

students?
- The timing of assessment tasks in the institution's course is important.
- Are they reasonably spread across the semester?
- Does the institution know how the timing of assessment in your course relates to other courses within the program that students are likely to be enrolled in?
- Learners in early years of a programme need to complete tasks early in the semester so the institution has some way of gauging the need for support. Make sure the institution knows what support is available. If possible, make arrangements with support staff before semester starts so the help comes to the learners 'just in time' for them to complete tasks.

Therefore, the objectives could be aligned according to Bloom's Taxonomy or on Krathwohl and Anderson taxonomy. According to Bloom (1956) learning objectives have to be designed by identifying what the learner should know or be able to do by the end of the course. For instance, you may want the learner to, *apply know, comprehend, analyze, synthesize or evaluate*. It therefore follows that when designing an assessment tool, the framework used should map the learning objectives to the assessment strategy. Similarly, if one chose to use the Krathwohl and Andersen taxonomy, then the learning objectives may be designed with the intentions of wanting the learner to *remember, understand, apply, analyze, evaluate or create*. For purpose of this study, the Krathwohl and Andersen taxonomy has been used to provide a typical example of aligning objectives to the assessment strategy for both traditional and electronic teaching methods.

Table 1: Aligning Objectives to Assessment Strategies (basing on Krathwohl and Anderson taxonomy)

Learning Objective	Traditional			Electronic		
Remember	Multiple choice or matching questions			Online quiz or fact-based game		
Understand	Multiple choice or Matching questions		Essay summary	Online quiz or fact-based game	Flow chart	Concept map
Apply	Multiple choice questions	Calculate the answer to a problem	Demonstrate a procedure	Online quiz	Do an online search	Make a podcast that examines a theory
Analyze	Distinguish between 2 theories	Analyze data	Reverse engineer a device	Conduct and report on a web survey	Collect and analyze media clips	Contrast 2 blog posts
Evaluate	Evaluate an writing sample	Appraise a research article	Judge a marketing plan	Moderate a discussion forum	Evaluate a video or debate	Peer evaluation
Create	Generate an expository essay	Formulate a research plan	Produce and deliver a presentation	Generate an e-Portfolio	Create a video	Build a website

Source: Suskie (2009)

Given the basis for aligning learning objectives to the assessment strategies as provided by Krathwohl and Anderson, (or by Bloom); the assessment framework needed to ensure quality in blended learning should combine both assessment strategies i.e. traditional and electronic. From Table 1, the kind of questions that should be used in carrying out effective assessment for quality assurance should require the learner to do what is provided in Table 2.

Table 2: Knowledge required of a Learner during Assessment

Higher order thinking	
Creating	Generate, plan, produce, develop, construct, organize, propose, invent
Evaluating	Argue, decide, validate, evaluate, appraise, judge, measure, rank, criticize, rate, select, consider
Analyzing	Distinguish, contrast, scrutinize, dissect, separate, discriminate, analyze, examine, survey
Lower order thinking	
Applying	Employ, execute, implement, practice, calculate, show, demonstrate, translate, illustrate, model
Understanding	Relate, interpret, classify, summarize, discuss, explain, conclude, compare and contrast
Remembering	Memorize, define, recite, recall, cite, draw, list, name, record, repeat

Source: Weinstein (2010*)*

CONCLUSION

Blended learning has been defined in different ways. However, there is a general agreement that blended learning is the planned integration of learning and teaching methods that support learners in the achievement of learning outcomes through the provision of a range of learning experiences that accommodate different approaches to learning in a range of learning environments. Various reasons are advanced for institutions of higher learning taking on blended learning. These include but not limited to dealing with increased enrolments against limited staff, infrastructure, limited funding and availability of teaching-learning materials. Greatrix (2001) and Herrington, *et al*., (2001) believe that blended learning should be adopted because it provides more effective pedagogy, increased convenience and access, increased cost effectiveness, more increase in active learning strategies, more learner-centered focus, and a greater emphasis on peer-to-peer learning.

While proponents of blended learning believe that the approach focuses on optimizing achievement of learning objectives by applying the "right" learning technologies to match the "right" personal learning style to transfer the "right" skills to the "right" person at the "right" time; adoption of blended learning comes with implications that often lead to several challenges that institutions need to resolve to successfully implement the approach. These include the need to train lecturers to acquire skills for integrating technology into their practice; need to appropriately design blended learning programmes, need for students' adequate skills to use technology; access to the Internet

by learners being crucial, and the need for proper assessment of the learning outcomes to ensure quality learning. Assessment is the ongoing process of establishing clear, measurable expected outcomes of student learning; ensuring that students have sufficient opportunities to achieve those outcomes; systematically gathering, analyzing, and interpreting evidence to determine how well students learning matches the expectations of stakeholders and; using the resulting information to understand and improve student learning.

Assessment of the quality of blended learning experiences is no easy matter as technologies typically support only part of the learning processes of the learners. Consequently, evaluating the contribution of the technologies in blended learning experiences requires well researched and designed methodologies sufficiently sensitive to recognize and acknowledge the relational nature of the technologies to the quality of learning. This should apply to all institutions within a given setting (level of training, country or otherwise) by having a common assessment framework. Such a framework should take cognizance of the state and abilities of the learners, lecturers, nature of course, type of programme and the institution. The framework should also define an assessment vocabulary, outline a practical assessment implementation process, and establish methodology of how to use assessment data in an integrated fashion across institutions.

RECOMMENDATION

Since assessment and learning objectives are intimately connected, this paper proposes that in designing an assessment framework for blended learning, it is important to revisit the institutional course learning objectives and consider the nature of what it is that the institution wants the learners to demonstrate. This could be aligned according to Bloom's Taxonomy or on Krathwohl and Anderson taxonomy and ensure that a blend between the traditional and electronic approaches is carefully integrated in the framework. The framework could finally include what the learner is required to do when being assessed.

As institutions of higher learning rush to adopt blended learning, they should seriously consider doing the first things first: invest in management of the impending challenges and collaboratively design an appropriate framework that takes cognizance of the state and abilities of the learners, lecturers, nature of course, type of programme and the institution. A framework that defines an assessment vocabulary, outlines a practical assessment implementation process, and establishes methodology of how to use assessment data in an integrated fashion across institutions.

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