TECHNOLOGY AND ASSESSMENT AT TERTIARY LEVEL: CASE OF LIMKOKWING UNIVERSITY OF CREATIVE TECHNOLOGY

Tawanda Mukurunge[1], Tsepiso Mcina[2], Takura Bhila[3]

Limkokwing University of Creative Technology, Lesotho Campus

Abstract

The buzzword in the teaching/learning process at Limkokwing University of Creative Technology (LUCT) is technology whereby students are encouraged to be innovative, as they learn to solve problems on their own. The catch, however, comes when one looks at the LUCT examination policy which does not allow the harnessing or use of technology of any kind by candidates in the examination room yet technology will have been used during the teaching/learning process. Rule 7 on the institution's rules and regulations list prohibits students from using any form of technology in the examination room. Using a mixture of interviews and focus group discussions with lecturers and students, this study sought to establish the merits and demerits of the LUCT examination policy in comparison to the assessment method that allows the use of teaching/learning technology in the examination room with students of journalism and media in the Faculty of Communication, Media and Broadcasting (FCMB) in the University. Data was gathered and presented qualitatively.

Keyword: Technology, Examination, Assessment, Innovation, Discovery.

1.INTRODUCTION

Assessment is the practice of collection and discussing information from the numerous and different sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences; the process culminates when evaluation results are used to improve successive education. Limkokwing University of Creative Technology (LUCT) systematically carries out this assessment process. It begins with class assignments, class tests, midterm tests which are then followed by the sitting of lecturers and managers to assess students' performance in the middle of the semester in a Board of Studies (BOS). The BOS helps the educators to assess students' works in order to determine and identify potential problem areas for students and seek solutions before it is too late. At the end of the semester before the approval of results by the University Senate, the Board of Examiners (BOE) made up of lecturers and academic management will sit to review students' work again and share information gathered from the assessments in order to establish problem areas in the whole teaching/learning process throughout the semester for future planning of the curriculum. The catch, however, comes with the assessment of midterm and final examinations with Rule 8 on the LUCT examination rules and regulations which reads as follows:

Students are required to switch off mobile phones and any other electronic devices and place them with their belongings in the designated area. If a candidate is found in possession of any of these devices during the examination they will be deemed to be in breach of the examination regulations and necessary action will be taken by the invigilator (LUCT, 2008).

This rule makes it sound as if the assessment process in the university is totally unrelated to the teaching/learning process practiced in the institution. For journalism classes, students harness technology all the time to the extent that at the beginning of a course, students are encouraged to purchase a good laptop computer, a camera and a smartphone and in class they are given assignments that require them to surf the

internet to glean information. Moreover, these students do courses that are technologically oriented like Web journalism, Online and mobile journalism and Writing for Online media. This study, therefore, endeavors to seek an insight into establishing the best assessment methodology for an institution that champions the course of technologizing the teaching/learning process in order to produce a 21st century graduate who fits into the postmodern world of entrepreneurship or employment industry.

Assessment ought to be in tandem with the educational content as well as the teaching and learning process. The teaching/learning process for courses in journalism is practical and the technology they use in class matches the technology the students will meet in industry after completing their studies. The LUCT Rule 8 cited above is cause for concern since this could be purely lack of appreciation of assessment as a key part of the learning/teaching process. This paper seeks to enlighten examination rule makers to consider the use of technology in the examination writing process, not just for this particular institution alone, so that assessment could be viewed as an important aspect of the complete teaching and learning process at all levels. It, therefore, is necessary to look at what assessment really entails.

Assessment can be done either at the beginning of a programme of learning (formative) or at the end of the programme (summative). Garrison and Ehringhams (2010) write that formative assessment is part of instructional process. When incorporated into classroom practice, it provides the information needed to adjust teaching and learning while they are happening (Garrison and Ehringhams, 2010). In this sense, formative assessment informs both teachers and students about student understanding at a point when timely adjustments can be made. The authors go on to say that these adjustments help to ensure that students achieve targeted standards-based learning goals within a set time frame. Again they mention that although formative assessment strategies appear in a variety of formats, there are some distinct ways to distinguish them from summative assessments

According to Garrison and Ehringhams (2010), summative assessments are given periodically to determine at a particular point in time what students know and/or do not know. They continue to write that many associate summative assessments are not only standardized tests such as state assessments, but they are also used as an important part of district and classroom programs. Summative assessment at the district and classroom level is an accountability measure that is generally used as part of the grading process (Garrison and Ehringhams, 2010). These authors provide some examples of summative assessments as follows:

- State assessments
- District benchmark or interim assessments
- End-of-unit or chapter tests
- End-of-term or semester exams
- Scores that are used for accountability of schools
- (AYP) and students (report card grades)

William, (2011) sums up that assessment is intrinsic to effective instruction in all its aspects.

2.STATEMENT OF PROBLEM

At the LUCT, assessment is carried out at different levels but evidently the rules and regulations for summative assessment do not factor the teaching/learning technology and how this can be harnessed in the learning process. The Rule 8 on the examination policy totally banishes the use of technology in the examination rooms by candidates who would have learnt using such technology. This rule number 8 brings out the idea that assessment is divorced from the teaching/learning process. That is problematic because assessment and the teaching/learning process should inform each other. That way, adjustments and improvements can be made for the benefit of the student.

3.STUDY OBJECTIVES

The objectives of this study are to:

i. Analyse the LUCT examination policy and see how best assessment could be linked to the teaching and learning process.
ii. Give pointers to the assessment policy makers at LUCT as to how technology could be harnessed during the teaching/learning process as well as during examinations for the student to benefit fully from the use of teaching/learning technology.

iii. Assist the institution not to regard assessment as a grueling process to the student but as a tool that is part and parcel of the teaching/learning process that has the ultimate goal of bringing the best out of the student.

4.RESEARCH QUESTIONS

i. How is assessment viewed by the LUCT?
ii. How best can technology be integrated in the LUCT examinations system to match the way it is harnessed in the teaching/ learning process?

5.THEORETICAL FRAMEWORK

This study was guided by the theory of Technological Pedagogical Content Knowledge (TPACK), which, according to Shinas (2013), is used to describe what teachers need to know to effectively integrate technology into their teaching practice. The author says that TPACK builds upon Shulman's (1986) notion of content specific knowledge for teaching or Pedagogical Content Knowledge (PCK), and that TPACK centres on the nuanced interactions among three bodies of knowledge: content, pedagogy and technology. Koehler, Cain and Misha, (2013) echo that the development of TPACK by teachers is critical to effective teaching with technology. This, therefore, is the best theoretical framework for this study because it emphasizes the integration of pedagogy and technology. The theory provides a relevant frame to this study which is seeking to inform the office responsible at the LUCT that integration of technology in examination processes is a tried and tested process and therefore should be taken into consideration.

6.LITERATURE REVIEW

One of the most important drivers of student learning is how that learning is assessed. It has been shown that students' attitudes towards their studies are strongly affected by the nature and timing of assessment (Rust, 2002 in Murphy, 2009).

Dumit (2012) writes that assessment is used in helping students meet certain standards. He also claims that assessment data is used to identify strengths and weaknesses in student performance, and to improve the quality of teaching and learning. Dumit identifies three types of assessment which are: diagnostic, formative and summative. Dumit says formative assessment is evaluation of learners to improve individual performance. As for diagnostic assessment, Dumit says it is used to ascertain each student's strengths, weaknesses, knowledge and skills prior to instruction. Summative assessment, Dumit says, summative assessment is evaluation of an individual learner for judgements or decisions about the learner in order to verify achievements, motivate, maintain or improve performance. Summative assessment is also for purposes of certification of performance, grading and promotion of learners.

Boston (2002) writes that while many educators are highly focused on state tests, it is important to consider that over the course of a year, teachers can build in many opportunities to assess how students are learning and then use this information to make beneficial changes in instruction. This diagnostic use of assessment to provide feedback to teachers and students over the course of instruction is called formative assessment. It stands in contrast to summative assessment, which, according to Boston, generally takes place after a period of instruction and requires making a judgment about the learning that has occurred, for example, by grading or scoring a test or paper.

The U.S. Department of Education (2017) on the use of technology for assessment, says that in addition to supporting learning across content areas, technology enabled assessments can help reduce the time, resources and disruption to learning required for the administration of paper assessments. Continued advances in technology will expand the use of ongoing, formative, and embedded assessments that are less disruptive and more useful for improving learning (U.S Department of Education, 2017). These advances also ensure that all students have the best opportunity to demonstrate their knowledge and skills on assessments that increasingly focus on real-world skills and complex demonstrations of understanding (U.S Department of Education, 2017).

In line with this study which advocates for use of technology both in class and the exam room, Klopfer, Osterweil, Groff and Haas (2009) state that technology can have a reciprocal relationship with teaching, as it pushes educator's level of understanding as well as to leverage on them for classroom use.

Pellegrino and Quellmalz (2011) assert that information technology and curriculum have remodeled content being delivered, and the mode of delivery including the criterion used by educators to assess student's knowledge and skills. Numerous changes brought by technology have stimulated educators to rethink the appropriate mode of assessment, deal with how information is obtained and clear feedback channels in an efficient manner. In relation to Pellegrino and Quellmalz (2011) view, this study is for the idea of alignment of technology in teaching and assessment.

West (2011) emphasizes on the need for technology in learning and assessment, stating that it enables and enhances collaboration and interaction among learners with the capability to share variety of resources. This author notes that the collaboration could be extended beyond teachers and learners, to parents, and other interested individuals. The ability spin education into a social event where learners receive regular feedback and assistance, boosts learner's achievement. West (2011) continues to write that digital technologies create opportunities for extensive evaluation and assessment of learners in multi-faceted manner, as teacher are no longer confined to standardized classroom tests as well as annual examinations. The use of technologies enables step by step feedback in order to gauge progress toward educational objectives for individual pupils (West, 2011). West (2011) further states that students spend substantial time serving the internet, which hones their skills.

Quellmalz and Haertel (2004) state that technology enables interactive tasks and aids the design of complex, while also presenting a wide sphere of skills, knowledge, and cognitive processes that educator could assess. Technology enhances collection of resources through online databases, and also avails educators with a pool of assessment tasks that could be incorporated within lessons (Quellmalz, 2013). Looney (2010) in Quellmalz (2013) adds that technology improves various forms of assessments and enhances understanding and timely feedback for better quality.

However, Drossos, Vassiliadis, Stefani and Xenos (2008) argue that advancement in information and communication technologies have not improved the pedagogy and learning of students. Although technology offers impressive possibilities for e-learning, other factors such as the underlying pedagogy, educational models, flexibility, and cost effectiveness are often overlooked according to these authors.

Clarke-Midura and Dede (2010) assert that assessments based on technologies and mediated performances are potentially more practical, cost effective, valid, and reliable than performance assessments that were developed and studied in the past. Likewise, where schools have often shied away from giving students an online identity in a digital networking platforms to increase opportunities for learning, professional organizations are leveraging networking technologies to increase collaboration, knowledge-sharing, and production amongst their employees (Clarke-Midura & Dede, 2010).

Riley (2011) emphasizes on the need for educators to have 20th century mindset, with the incorporation of the ever-changing technology. Learners opt for sophisticated technology for learning; therefore assessing students without technology becomes pointless. Educators should embrace technology in order to improve assessment of learners and measure individual student growth.

Ploth (2017) adds that technology empowers educators to work faster, decreases the paperwork, and provides more time for working with the students using the data. Students benefit because they have this feedback when they need it most and also learn additional vital technology skills in the process**.**

7.METHODOLOGY

This study used qualitative research methodology for gathering, presentation and analysis of information. Bricki and Green (2015) writes that qualitative research is characterized by its aims, which relate to understanding some aspect of social life, and its methods which (in general) generate words, rather than numbers, as data of analysis. In order to gather information from the managers responsible for assessment and lecturers at LUCT, qualitative interviews were carried out. Edwards and Holland (2013) postulate that qualitative interviews are characterized by high levels of flexibility and lack of structure. They continue to say that qualitative interviews are in-depth, informal, non-directed, open-ended, conversational, naturalistic, narrative, biographical, oral or life history and ethnographic. This was the technique of choice for this

study because the researcher is familiar with the LUCT assessment system as well as with the personnel responsible for assessment both at management and lecturer/ invigilator level. The interviewer started by studying the documents regulating the administration of examinations at the LUCT. The interview questions to both management responsible for examinations and to lecturers who invigilate were therefore based on information from the examination rules and regulations documents. The same documents informed the group discussions with students. The aim of the study was not to solicit for what is ideal in assessment at LUCT but rather to establish the facts and reality of assessment in the institution. Interviewees at lecturer level were randomly selected and six lecturers from the six faculties were interviewed.

With a group of six randomly selected students from the Faculty of Communications, Media and Broadcasting (FCMB), focus group discussions were carried out on assessment methods in the university. These students are involved in cross faculty learning as they do courses in Information Technology, Design and Business, among others, so they are exposed to the LUCT modes and methods of assessment broadly. Nyumba, Wilson, Derrick and Murkherjee (2018) observe that focus group discussion is frequently used as a qualitative approach to gain an in-depth understanding of social issues. They go on to say that the method aims to obtain data from a purposely selected group of individuals rather than from a statistically representative sample of a broader population.

Documentary analysis was carried out in this study. Bowen (2009) defines document analysis as a systematic procedure for reviewing or evaluating documents, both printed and electronic (computer-based and Internet-transmitted) material. He goes on to say that, like other analytical methods in qualitative research, document analysis requires that the data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge. For the purposes of this study, documentary analysis was appropriate in establishing the LUCT documented policy that guides assessment of technology intensive courses.

8.FINDINGS

8.1. Findings from the LUCT Academic Administration Unit

Responding to questions on assessment in the LUCT, the Academic Administration Unit (AAU) personnel said that there is flexible provision when it comes to assessment and technology. They went on to say that typical examples are IT programming courses where candidates are examined practically in the computer laboratories. They explained that this also applies to faculties of Design and Architecture where student portfolios are compiled electronically and examined by digital methods of assessment.

The AAU personnel however established that any gadgets that give students unfair advantage during closed book classroom examinations are strictly prohibited.

The AAU personnel went on to say that the policy that gives requisite room for practical (Film or Movie Production, Design works, IT programming, Business Entrepreneurship projects) are assessed with a criteria that is congruent with pedagogy (methodology of teaching and learning). They said that such explicit course specific measures are allowed to be prescribed in the Course Outline (Module Outline).

The documents that guide the writing of examinations at the university, however, do not reflect any of the information provided by the AAU personnel. On paper, the AAU in a document entitled Conduct and Invigilation of examinations says students with special needs are required to sit for their examinations at the Special Needs Unit. The special needs are not clearly spelt out so it is difficult to tell whether this covers the special requirement for technology.

In another document entitled AAU Invigilator Announcements Document, the AAU explicitly says the invigilator should announce to students before the examination that: "You are not allowed to have electronic diaries, planners or dictionaries in the examination. If relevant- calculators must be from the approved list".

In yet another document on guiding the writing of examinations; Invigilators Invigilation Rules, the AAU on item 16 says that the use of mobile phones is prohibited. Another document entitled Students examinations rules and regulations on item 7, the AAU says students taking open book examinations may only use books and notes, specified by the examiner. Item 8 reads: "students are required to switch off mobile phones and any other electronic devices and place them with their belongings

in the designated area. If a candidate is found in possession of any of these devices during the examination, regulations and necessary action will be taken by the invigilator".

8.2. Findings from lecturers

Lecturers said they use assessment to establish their students' levels of knowledge and comprehension of subject matter at regular intervals. Lecturers also said they use assessment as a tool to establish the effectiveness of their teaching methods.

Some lecturers said assessment at LUCT is not very effective as in most cases students simply reproduce material from the student notes from the lecturer because it is mandatory for lecturers to prepare and distribute these notes to the students.

One lecturer pointed out that there is a mismatch between methods of delivery and methods of assessment because during the teaching and learning process, students are taught to acquire knowledge as well as to use technology for application purposes when they eventually go to practice in industry. The mismatch comes up in assessment where the emphasis is on testing knowledge only minus application because technology is banned from the examination room for candidates. Lecturers pointed out that internet connectivity is a challenge because the bandwidth by the university is too small. This makes the use of technology difficult.

8.3. Findings from students

Students said that the university does not allow technology in the examination room mobile phones and computers. Students use pen and paper only in the examination room.

Students of journalism reported that they however wish they could be allowed to use laptop computers in the exam room because typing speed and mailing stories should be part and parcel of their training and assessment since they are going to be using such gadgets on a daily basis in their professional lives.

Students went on to say that the LUCT is a technology school but most students do not know how to properly utilize the technology at their disposal. For instance, they mostly use their lap top computers for typing assignments in word and nothing much yet in the world of work after school they are required to be innovative and work with technology on a daily basis. They, therefore, say that the university should allow usage of computers in exams for all purposes.

8.4. Findings from management

One member of management responded that there is no special provision for the use of technology in the exams beyond the calculator for those required to do sophisticated calculations. Smart phones and computers of all kinds are not allowed in the exam. The manager went to say the university does not have a policy in place at the moment on regulation of use of technology in the exam by students.

8.5. Discussion of findings

Ghavifekr and Rosdy (2015) postulate that ICT is considered on e of the main elements in the transformation of a country for future development. Bearing this in mind, institutions of learning at all levels ought to consider moving away from traditional tendencies and integrate technology in the teaching/learning process as well as during the assessment process. The reality of the matter with the LUCT courses, from the responses by students, is that most of the courses taught in the institution use technology during the teaching/learning process. This therefore calls for reconsideration of the rules and regulations governing the running of examinations.

From the lecturers' responses, learning at LUCT is learning for life yet the assessment methods are far from this reality. Assessment in the institution is evidently for testing students' knowledge. This has the detrimental effect of making students to study for tests and examinations. Santhanam (2002) says that assessment is at the heart of the undergraduate experience. She goes on to say that assessment defines what students regard as important, how they spend their time, and how they come to see themselves as students and then as graduates. It follows then that it is not the curriculum which shapes assessment, but assessment which shapes the curriculum and embodies the purposes of higher education.

9.RECOMMENDATIONS

The LUCT Academic Administration Unit should, in developing the institution's examinations policy, cater for technology intensive courses and develop a comprehensive document to guide examiners, invigilators and candidates properly on this policy. The institution is a university of innovation and creativity so there has to be a balance in assessment so that candidates are not only examined on knowledge but application as well.

The university should strive towards a teaching and learning process that allows for students' constant and consistent interaction with technology because after university, students will be working with technology on a daily basis in the world of employment. There should be a match between teaching and learning methods and assessment which should be in tandem with the expectations of industry.

The university should also commit to the provision of the requisite technology for use in the examination room by the candidates. Harnessing technology during the teaching and learning process alone and then excluding it from the assessment process is counterproductive because students will tend to specialize in mastering how to pass the knowledge based examinations at the expense of mastering application components of their education.

The institution needs a bandwidth which can allow students to be on a fast network rather than students struggling to download a document which can take the whole day. With a fast bandwidth, lecturers can implement virtual classroom sessions and students will be submitting online at the same time the lecturer marking and assessing online, via a proxy of a plagiarism check and many other enhanced learning platforms being introduced.

This study strongly recommends the LUCT's AAU to carry out thorough study and come up with examination guidelines that cater for assessment of technology intensive courses. There should also be provision of the requisite technology for both pedagogy and assessment within the university.

The institution should also commit money to enlarging the bandwidth for provision of faster Internet for lecture and examination rooms so that lecturers can set up e-labs for technology intensive courses.

10.CONCLUSION

Technology is an integral part of the 21st century learning and in conformity to this fact; the LUCT has technology intensive courses. The LUCT AAU should therefore create a comprehensive examinations policy in aligning assessment to this 21st century pedagogy. The institution should back up this technology oriented pedagogy with the requisite technology so as to make the teaching/ learning and assessment process easy and realistic.

REFERENCES

[1] Boston, C. (2002). The concept of formative assessment. *ERIC Digest*

[2] Bowen, G. A.(2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, Vol. 9, no.2, 2009.

[3] Bricki, N. & Green, J. (2007). A guide to using qualitative research methodology. *MSF Field Research*.

[4] Clarke-Midura, J. & and Dede, C. (2010). Assessment, Technology, and Change. *Journal of Research on Technology in Education* Vol. 42, No. 3, pp. 309–328 www.iste.org/jrte

[5] Darrell M. West, 2011 Using Technology to Personalize Learning and Assess Students in Real-Time

[6] Drossos, L., Vassiliadis, G. B. Stefani, G.A & Xenos, G.M. (2008). Blended ICT Models for Use in Higher Education file:///C:/Users/T'sepi.M/Downloads/Advances%20in%20Information%20and%20Communication%20Technology%20Education%20Series.pdf Adapting Information and Communication

[7] Dumit, N.Y. (2012). Diagnostic/ formative/ summative assessment.

[8] Edwards, R. & Holland, J. (2013). What is qualitative interviewing? Bloomsbury.

[9] Garrison, C. & Ehringhams, M. (2010). Formative and summative assessments in the classroom.

[10] Ghavifekr, S. & Rosdy, W. A. W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International Journal of Research in Education and Science*. (IJRES),1(2), 175-191

[11] Klopfer, E., Osterweil, E., Groff, J. & Haas, J. (2009) The Instructional Power of digital games,

social networking simulations and How Teachers Can Leverage Them

[12] Koehler, M. J., Cain, W., & Misha, P. (2013). What is technological pedagogical content (TPACK)? *Journal of Education* 193(3).

[13] Murphy, F. (2009). Module design and enhancement: Assessment types. *UCD Teaching and learning/ resources*.

[14] Nyumba, T. O., Wilson, K., Derrick, C. J. & Mukherjee, N. (2018). The use of focus group discussion methodology: Insights from two decades of application in observation. British Ecological Society.

[15] Santhanam, E. (2002). Congruence of teaching, learning, assessment and evaluation. *Teaching and Learning Forum 2002. Focusing on the student*.

[16] U.S Department of Education. (2017). Reimagining the role of Technology in Education. *2017 National Education Technology Plan Update*.

[17] William, D. (2011). What is assessment for learning? Studies in Educational Evaluation 37. www.elsevier.com/studec

[18] Quellmalz, E. S., & Moody, M. (2004). Models for multi-level state science assessment systems. Report commissioned by the National Research Council Committee on Test Design for K–12 Science Achievement

[19] Pellegrino, J. W. & Quellmalz, E.S.(2011). Perspectives on the Integration of Technology and Assessment. *Journal of Research on Technology in Education* Vol. 43, No. 2, pp. 119–134

[20] Ploth, R. (2017). How I Got Started Using Technology To Assess Student Learning.

[21] Quellmalz, E. S. (2013). Technology to Support Next-Generation Classroom Formative Assessment for Learning.

[22] Riley, S. (2011). Rising Technology to Creatively Assess Students and Teachers.

[23] Shinas, V. H. (2013). Examining domains of technological pedagogical content knowledge using factor analysis. *Journal of Research on Technology in Education*. Volume 45 Number 4