

Peer Reviewing of Electronic Examinations In Tertiary Institutions: Is It Being Done? A Case Study of Selected Three Higher Education Institutions- Lusaka, Zambia

Patricia Mambwe¹, Jordan Tembo²

¹*Department of Nursing, School of Health Sciences, Rusangu University, Monze, Zambia*

²*Kalindawalo General Hospitals, P.O.Box 560008, Petauke, Zambia*

Abstract: Peer reviewing of examinations at assessment design stage is a sustainable approach for quality. The objective of peer reviewing is to identify deficiencies which can potentially adulterate the validity, reliability and integrity of assessments. Before COVID-19 pandemic, higher learning institutions in Zambia, using the traditional paper-based examinations, provided flowing evidence of peer reviewing of examinations. The objective of this study was to find out whether universities peer reviewed electronic examinations. This study was conducted between May and August, 2021. 15 participants were purposively sampled from 2 private universities and 1 public university in Zambia. Using the single- interview per participant data collection method, this study found that peer reviewing of electronic examinations was not being done in all the 3 institutions of higher learning- no independent review for spelling deficiencies, poor wording, unclear verbs, confusing sentence structure, unbalanced number of questions testing students' level of cognition, repetitions and other deficiencies that compromise reliability, validity and integrity of assessments was done before examinations were administered to students. This study recommends that Higher Education Authority (HEA) develop assessment standard guidelines for setting and moderating examinations for universities and other tertiary institutions. The study also recommends mandatory Professional Development conferences and seminars on peer review techniques of online exams for all academic staff in universities and other learning institutions.

Key words: Peer reviewing, assessment, examinations, standard, quality

I. INTRODUCTION

Peer reviewing also known as moderation is the cornerstone for quality assurance in the area of students' assessment. Peer reviewing is defined as "a process of subjecting a lecturer's set of examination questions to the scrutiny of others usually experts in the same field who comment on the nature of questions, merit, significance, and appropriateness (Dancik, 1991) to students' cohort and material covered. Assessment moderation is a significant component of a quality education system (Smith, 2012). Peer reviewing acts as a layer of filtration to ensure that only high quality (Kelly, Sadeghieh & Adeli, 2014) examination questions that are clear, simple and valid are prepared for the

assessment of students' level of comprehension and applicability. Peer review is intended to improve the quality (Kelly, Sadeghieh & Adeli, 2014) of students' assessment. Terms such as assessment, measurement, evaluation and testing are used interchangeably to refer to examinations (Domeniter et al., (2018). Assessment of student learning remains an ongoing and prevalent activity for (Jankowski et al., 2018 :3) both online classes and face to face classes. Assessment is an essential component in the learning and teaching environment and should promote learning as well as measure or certify outcomes (Clements & Cord 2013).

There are several reasons why students are assessed. Assessments help in the identification and evaluation of strengths and weaknesses of students, grade their learning, monitor and provide feedback on student progress, assess competence and help predict future behaviour (Clements & Cord, 2013). Production of quality students is the mandate of each institution of higher learning. Higher institutions of learning are prodded by the private and public sectors including the community to offload effective and competent graduates to fill the ever work environment void (Clements & Cord, 2013; Menon, 2014; Henderson & Crawford, 2020). Potential employers place premium value on graduates who are knowledgeable, skilled, innovative, think critically and possess problem-solving abilities. But these critical abilities do not come easily. They require delivery of content to students using appropriate instructional methods accompanied by suitable evaluation and assessment practices that allow instructors to gauge individual student learning ability (Menon, 2014). Under this credible perspective, 'universities have established internal quality assurance units to coordinate the various activities that comprise quality' (Domeniter et al., 2018: 476).

The Australian Learning and Teaching Council (2012) observes that peer reviewing is more than checking the accuracy of questions; it is the checking of assessments from the development of each item to ensure that the whole assessment process is fair, valid and reliable enabling equivalence and comparability (Australian Learning and Teaching Council/ALTC, 2012a). Feedback from peer review

is significant. Relevant peer reviewed feedback is used to improve the quality of examinations. If this is done, then it leads to high quality of examinations in which papers are representative of the entire content covered, examination questions are not continuously repeated and hence questions are unpredictable (Munene, 2013; Bunyi, 2013).

Prior to COVID-19 pandemic, traditional paper- based examinations characterized the education landscape in higher education for many years. In recent years however, especially from the time COVID-19 pierced societies, in 2019, the old-order of administering examinations has been seriously perturbed providing an environment for electronic examinations to become increasingly popular in tertiary education. The ancient's long system of assessment – traditional-paper based examinations received a well-deserved balance through peer reviewing or moderating of examination questions before examinations are undertaken by students and after marking students' answer scripts.. Higher Education Institutions reviewed and evaluated the quality, validity, reliability and integrity of the examinations before being administered to students and after marking (Ntema et al., 2006). The examiner and the moderator shared notes and agreed on the quality of the assessment.

The surge in the use of technology to assess students raises one important question: how valid are electronic examinations? Do electronic- examination assesses what they are intended to measure- content comprehension, application, analysis, synthesis, skill manipulation or attitude change? Gabriele and Sofie (2014) are of the view that online exams offer an interesting and effective method of assessment for enhancing objectivity. It is nonetheless necessary to design questions intelligently (Gabriele and Sofie, 2014) in order to avoid having different flaws in the examination paper and examining only superficial knowledge. Maintaining quality during assessments is critical. Assessments should be prepared in line with the objectives of the course and be able to evaluate not only lower cognitive level thinking but also higher cognitive level thinking either using online or paper face to face assessments.

The University of South Australia (2020) outlines parameters for achieving effective peer-reviewed electronic examination. Foremost, among the parameters, concerns examination questions' ability to address the course objectives and the appropriate level of students' cohort. The second parameter addresses the fairness of the examinations in relation to the number of questions asked, time allocated for students to answer. The third parameter relates to presentation of questions. Are the questions and instructions clearly worded? Are the questions and instructions free of typographical errors?

A study by Chalchisa (2014) on *Practices of Assessing graduate students' learning outcomes in selected Ethiopian Higher Education Institutions*, suggested that faculty teaching staff should pay attention to the assessment of students learning through quality of examination development. The

setting and marking of assessment tasks should be subject to moderation processes to improve their validity and reliability.

Research Question

Do tertiary institutions peer review E- examinations before they are administered to students?

Significance of the study

Findings of this study will shine a bright light on the prevailing practices in tertiary learning institutions around peer-reviewing of electronic examinations. Educators, Examiners, researchers and assessment standard developers will utilise the findings and recommendations to improve quality in the assessment of students in Colleges and Universities.

II. MATERIALS AND METHODS

This study used an explorative cross sectional research design. Since little is known on this subject the study used a qualitative approach to bring out richer perspectives. The study used 3 universities- two private and one public university in Zambia. The study was conducted between May and August, 2021. Purposive sampling method was used to select universities using electronic- learning platform to teach and assess students during the Covid 19 pandemic. The study sampled 15 lecturers in total- 5 lecturers from each institution. The study used single- interview per participant. Interviews were conducted on phone. Interviews began with explanation on the purpose of the study before collection of demographic data. Participation was voluntary. Anonymity was maintained as participants were told not to use their names. Before ending each interview session, the interviewer summarised the main points and asked participants if they had any questions or clarifications. Each interview took between 30 to 40 minutes. Each interview was recorded in line with the prior consent given by the interviewee. The audio file was immediately deleted after data analysis. Thematic analysis was utilised to analyse the collected data.

III. RESULTS

Table 1: Demographic Data of the participants from tertiary institutions A, B & C

Gender of Participants	Males = 6 (40%)	Females 9 (60%)
Years as a lecturer	<5 years = 2 (13%)	>5 years = 13 (87%)
Received Orientation on E- learning mode of teaching	All participants received the Orientation =15 (100%)	

The table above shows that 6 (40%) of the participants were males while 9 (60 %) were females. 2 (13%) of the participants had been lecturing for less than five (5) years while the majority, 13 (87%) had been lecturing for more than five (5) years by the time of data collection. All participants were oriented on E- learning mode of teaching and examining students.

How do you administer examinations to students amid COVID-19 pandemic?

The purpose of this question was to find out the mode through which examinations were administered in tertiary institutions of learning during COVID-19 pandemic. Participants explained that administration of examinations to students in their institutions had transitioned from the traditional paper-based to electronic. One participant from a private university reported:

‘From the time COVID-19 seriously hit our country in 2020, administration of examinations to students at our institution changed from paper-based to electronic. This was done to ensure zero contact of staff and students’ (Female participant, Private university).

From the public university, one participant explained:

‘Though our institution was not a pace setter in the utilization of electronic platform for administration of exams but finally we are using the electronic management system for this purpose’ (Female participant, Public university).

A participant from the second private university said:

‘At our institution, every lecturer is using electronic platforms to teach and administer examinations to students’ (Male participant, Private university).

How is quality of online examinations assured at your institution?

This question was aimed at finding out whether tertiary institutions of learning guaranteed quality online examinations through peer reviewing. Participants gave a universal response that examinations administered to students online were never peer reviewed. This automatically meant that exam questions were not verified by independent lecturers whether they were set according to course objectives, content covered, and level of students’ cognitive levels. It also meant that typographic errors, repetitions, vagueness, over simplicity, and wording were not checked. In all the 3 institutions, a lecturer could set exam questions singularly, loaded them on the Learning Management System (LMS) few days to few hours before students attempted the examination, clearly without peer reviewing as quoted by one participant from a private university.

‘I’m the one who decides what type of questions to set for my students whether objective, subjective or mixed type of questions. When I am done I post the questions on the platform. That’s it! In short no one checks the exam prepared by the other’ (Participant, Private university).

One participant from a Public university sounded shocked especially with the word quality and online examinations.

‘Quality? What quality? I don’t trouble myself by setting essays for online examinations. I settle for objective questions only and the machine awards marks. I have never received

any report that someone checked through the exam questions I set’ (Participant Public university).

A participant from one of the private universities submitted something interesting.

‘I always fish out questions from the examination bank within the Learning Management System. Sometimes I forget and get the shock of the day when a student tells me check the question paper. It shows 2020 and the examiner is lecturer X yet this is 2021 and you are Lecturer Z. About 10 questions have been repeated’ (Participant private university).

From the Public university a participant shared a neater perspective of peer reviewing.

‘Peer reviewing is essential because when exams are set hurriedly, there is a greater likelihood of vagueness in the way questions are phrased and I see that every time I set my exams a day before students write. It is always a problem because no one counter checks my exams for wording, typographic errors, number of questions against time allocated for the exam, allocation of marks, coverage of objectives’ (Participant Public university).

Another participant from a Private university shared an important dimension of electronic examinations.

‘Before the advent of COVID-19, we could peer review examinations to evaluate the Quality, Validity, Reliability and Integrity of examinations. Now with online teaching and assessment, the practice has gone down the drain. No wonder online exam questions are littered with spelling deficiencies, poor wording, unclear verbs, confusing sentence structure, unbalanced number of questions testing students’ level of cognition’. Worse enough, our institution has never developed any test specification based on a test blue print and course objectives. (Participant Private university).

In all the three tertiary learning institutions, participants explained that peer reviewing of electronic examinations was not being done at assessment design stage.

One participant from a public university said:

‘When it’s something to do with students’ grades we are serious on that one but moderation of exam questions, I am afraid we don’t do that’ (Participant public university).

Admitting cryptically, a participant from a private university said:

‘COVID-19 has ripped through the good order of ensuring examinations administered to students are of high quality. Short cuts characterize the electronic examination landscape but ultimately society suffers hugely’ (Participant Private university).

IV. DISCUSSION

Examinations are pivotal points around which the whole system of education revolves. The success or failure of examinations is indeed an indicator of the success or failure of

that particular system of education (Maheshwari,2011). According to the Commission for University Education in Kenya (2014), the policy on the assessment procedures demands that all universities adhere to standards in setting and administration of examinations. The standards include among others, clear guidelines on setting, moderating and administration of examinations. It also include marking and processing examination results.

Scholars observe that quality examinations improve quality of education and the overall enhancement of teaching and learning (Adedoyin, 2013), for whatever kind of seed is sown in the classroom, the manner in which it is nurtured will determine the harvest that the world will reap in the form of its educated youth coming out of the schools, colleges and universities (Maheshwari,2011).The objective of this study was to explore whether Higher Education institutions in Zambia peer review electronic examinations before they are administered to students. This study found that peer reviewing of online examinations was not being done in all the three (3) institutions selected for study as explained by one of the participants:

‘Peer reviewing of exams was a pre-pandemic feature of our quality assurance’ (Participant, private university).

Domeniter et al., (2018) in their study entitled *Effect of internal and external moderation on the quality of examinations in public universities in Kenya* observed that Universities’ quality and excellence are tested through quality examinations which have been developed using systemic procedures that are known, shared and implemented by all academic staff for the sake of quality assurance.

This study also found that students grades and not examination questions was what institutions peer reviewed. Ntema et al., (2006) recommends that all examinations should be moderated for test content, coverage of objectives, consistency in marking, repetition of questions. Ntema et al., (2006) further recommends that internal and external moderators should be appointed to uphold quality of examinations. According to the University of South Australia online teaching and learning guides (2020), assessment methods and judgements must be valid and reliable, and regularly subjected to peer review, discussion and consensus. A similar study by Chalchisa (2014) titled *practices of assessing graduate students’ learning outcomes in selected Ethiopian higher education institutions*, suggested that professors and associate professors should pay attention to the assessment of students learning through quality of examination development. The setting and marking of assessment tasks should be subject to moderation processes to improve their validity and reliability.

V. CONCLUSION

Peer-reviewing is a necessary part before and after administration of examinations to students. Peer- reviewing helps to safeguard the integrity of assessments. To ensure promotion of critical thinking in students peer reviewing

should be done at the assessment design and after marking students’ scripts. Moderation conducted at the assessment design stage certifies quality of examinations. Universities and other Training institutions should formulate and adhere to peer-reviewing policy of all assessments so that online assessments given to students are valid, reliable and are of high quality.

VI. RECOMMENDATIONS

1. Development of assessment standard guidelines meant on setting and moderating examinations for training institutions
2. Mandatory Professional Development conferences and seminars on peer review (moderation) techniques of online exams for all academic staff in learning Institutions
3. E-exams should be prepared with an accompanying lag to allow peer moderation.

REFERENCES

- [1] Australian Learning and Teaching Council (2012a). *Assessment Moderation Toolkit*. Melbourne, Australia. Retrieved from <http://resource.unisa.edu.au/course/view.php?id=285&topic=1>.
- [2] Australian Learning and Teaching Council (2021). *Good practices in moderation of assessment in transnational education*. Melbourne, Australia: Retrieved from <http://resource.unisa.edu.au/course/view.php?id=285&topic=1>.
- [3] Adedoyin, O. (2013). *Public examinations and its influence on the Botswana educational system: Views of undergraduate education students at the University of Botswana*. Journal of Humanities and Social Sciences, 1(2).
- [4] Buni, G. W. (2013). The quest for quality education: the case of curriculum innovations in Kenya. *European Journal of Training and Development* 37 (7).
- [5] Chalchisa, D. (2014). Practices of Assessing Graduate Students’ Learning Outcomes in Selected Ethiopian Higher Education Institutions . *Journal of International Co-operation in Education* DOI: 10.15027/36172 <https://www.semanticscholar.org/paper/Practices-of-Assessing-Graduate-Students%27-Learning-Chalchisa/1798a17de4622ef887acdaf9ea42fdbb40d497ca>.
- [6] Clements, M. D., & Cord, B. A. (2013). *Assessment guiding learning: developing graduate qualities in an experiential learning programme*. *Assessment and Evaluation in Higher Education*, 38(1), 114–124. Accessed from <https://ro.uow.edu.au/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1001&context=buspapers@15:43> hours on 5/8/2021
- [7] Dancik, B (1991) *Importance of Peer Review, The Serials Librarian*, 19:3-4, 91-94, DOI: 10.1300/J123v19n03_11
- [8] Domeniter, N. K., Adhiambo, J. M., Mwalw’a, S. M., & Waweru, J. C.(2018). EFFECT OF INTERNAL AND EXTERNAL MODERATION ON THE QUALITY OF EXAMINATIONS IN PUBLIC UNIVERSITIES IN KENYA. *The Strategic Journal of Business & Change Management*. ISSN 2312-9492(Online) 2414-8970(Print).Vol. 5, Iss. 3, pp 475 - 496, August 12, 2018. www.strategicjournals.com
- [9] Gabriele Frank and Sofie Bitter (2014) Online Exams: *Practical Implications and Future Directions* accessed from https://www.researchgate.net/publication/234153336_Online_Exams_Practical_Implications_and_Future_Directions on 05/8/2021 @ 11:20 hours
- [10] Henderson and Crawford (2020). *Exams and assessments in COVID-19 crisis: Fairness at the centre*. The Fourth UNESCO COVID-19 Education Webinar organized on 9 April 2020. Accessed from <https://en.unesco.org/news/exams-and->

- assessments-covid-19-crisis-fairness-centre on 15/8/2021 @15:16 hours
- [11] Henderson and Crawford (2021) *Learners' Perspective towards E-Exams during COVID-19 Outbreak: Evidence from Higher Educational Institutions of India and Saudi Arabia* Mohammed accessed from <https://www.mdpi.com/1660-4601/18/12/6534>
- [12] Jankowski, N. A., Timmer, J. D., Kinzie, J., & Kuh, G. D. (2018, January). *Assessment that matters: Trending toward practices that document authentic student learning*. Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NILOA)
- [13] Maheshwari, V.K. (2011). *Malpractice in examinations - The Termites Destroying the Educational Setup in Higher Education institutions in India*. K.L.D.A.V (P.G) College, Roorkee, India accessed from <http://www.vkmaheshwari.com/WP/?p=310> on 15/8/2021 @ 16:32 hours
- [14] Menon, G. (2014). *Maintaining Quality of Education in Management Institutes-Reforms Required*. Procedia Social and Behavioral Sciences, 133, 122-129.
- [15] <https://www.qaa.ac.uk/docs/qaa/guidance/assessing-with-integrity-in-digital-delivery.pdf>
- [16] Munene, I.I.(2013). New Higher Education Reforms in Kenya. *INTERNATIONAL HIGHER EDUCATION*, Number 73 Fall 2013 Pages 14-16.<https://ejournals.bc.edu/index.php/ihe/article/view/6110/5353>
- [17] Ntema. E. et al., *Assessment standards* (2006), Affiliated Health Training Institutions. Botswana
- [18] Smith. C. (2021) *Why should we bother with assessment moderation?* Nurse Education today, Volume 32, issue 6 accessed from <https://www.sciencedirect.com/science/article/abs/pii/S0260691711002723?via%3Dihub#!> On 4/09/2021 @ 19:42 hours.
- [19] University of South Australia (2020). *How do you peer review online examinations?* <https://i.unisa.edu.au/siteassets/staff/tiu/documents/covid-19/peer-reviewing-your-online-examination.pdf>