



**EFFECT OF INTERNAL AND EXTERNAL MODERATION ON THE QUALITY OF EXAMINATIONS IN PUBLIC UNIVERSITIES IN KENYA**

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### ABSTRACT

*This study sought to examine the effect of internal and external moderation of examination on the quality of examinations in public universities in Kenya. The study also examined the influence of university standards and guidelines on the relationship between internal and external moderation of setting examinations and quality of examinations. The study used the concurrent triangulation research design of mixed method which combines phenomenological research design for qualitative data and cross-sectional survey research design for quantitative data. Both probability and non-probability sampling techniques were used to select the sample for the study. A total of 242 respondents were involved in the study. Data collection instruments included questionnaires, interview guides and document analysis. Qualitative data were organized into themes to make meaningful conclusions of the study. The study found a statistically significant relationship between internal and external moderation and quality of examinations. It was found out that internal and external moderation lacked the seriousness it deserved. University standards and guidelines was found to influence the relationship between internal and external moderation on setting examinations and quality of examinations.*

**Keywords:** Internal and External Moderation, Examination Setting, Examination Quality

## INTRODUCTION

According to Khan (2011), universities all over the world are supposed to be characterized by quality and excellence. This is 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. Demand for competent graduates by employers is placing great pressure on universities to improve education service and delivery. This can be achieved not only in instructional methods, but also in evaluation and assessment practices that allow instructors to gauge individual student learning ability (Menon, 2014). This process should include both performance assessment and assessment of factual knowledge.

Examinations are tools intended for the evaluation of the progress made by an individual, in the course of acquiring skills and knowledge over a period (Nweze, 2009). It has to do with the passing of value judgment on an individual, on the basis of the individual's performance in a set of questions, statements or series of tasks given. The intention is to assess how much of a desired trait, skill and knowledge the individual possesses. In some cases, terms such as assessment, measurement, evaluation and testing are used interchangeably to refer to examinations. Students' assessment is one factor that can be used to assure education quality. The teaching and learning process needs assessment in order to gauge the student's performance.

According to Adedoyin (2013) in Botswana, lecturers are likely to use past examination papers to revise with their students instead of focusing on syllabus content. Quality content coverage is therefore compromised and the emphasis is on how to pass the examinations. Furthermore, Nolen, Haladyna, and Haas (2002) reported that many lecturers engaged in inappropriate or unethical testing procedures because of pressure to produce high test scores. They

are frustrated by external and internal pressures to teach according to the test and are angry that the examinations were used to evaluate lecturers' effectiveness.

Many universities have established internal quality assurance units to coordinate the various activities that comprise quality. Among the plethora of internal quality assurance tools in use are external examiners, self-evaluation and academic audits (Mokamba, 2015). Self-evaluation is at the top in terms of faculty involvement and empowerment in curricular matters as it provides space for internal critique of programmes (Munene, 2013). It also provides opportunities for identification of strength and weaknesses and means of identifying key performance indicators. External examiners undertake the validation of the assessment methods and modes. Universities in Kenya have recognized the need and importance of internal quality assurance in academic programming as a means of ensuring accountability as nearly all universities have established directorates dedicated to quality assurance (Republic of Kenya, 2012; Mathooko, 2013). The study then sought to understand the accountability from the quality assurance officer on how adherence to administrative procedures of setting examination in public universities was done.

In Kenya, universities have examination policies and standard operation procedures and guidelines on examination setting, moderation, administration and related activities (Kibabii University, 2014; University of Nairobi, 2013; Maseno, 2008; Cheserek, 2011; Eucharia, 2012). While this is in order, implementation, monitoring, evaluation and utilization of feedback has not been done effectively. This therefore created the need to study how these policies and guidelines especially related to setting examinations are being implemented, supervised and monitored in these universities.

Graduates from universities ought to undergo a fundamental transformation that empowers them to think clearly and independently and solve problems creatively. They should also be able to make sense and use information and embody moral and intellectual values that characterize dignified citizenship. Such graduates would be innovative, enterprising, morally sensitive, and self-directing. Basing on these, this study sought to establish whether the adherence to the administrative procedures of setting examinations contribute towards the achievement of these attributes in students as the examinations are the final stage of curriculum evaluation.

The outcry from the academic staff on large class sizes (Mbirithi, 2013), unplanned professional development training (Obwogi, 2011), administrative lack of consultation on academic programmes (Munene, 2013), altered admission criteria, merging of classes, reduced time period of semester study, lack of timely feedback from evaluation done, inspection kind of quality assurance, inadequate quality assurance standards (Omwenga et al., 2016), challenged human resource management practices in the university (Mathooko, 2013), reduced job specification criteria for academic staff, unqualified or under-qualified academic staff due to shortage (Gudo et al., 2011), strained resources (Mulongo, 2013), low remuneration and lecturers' skills in utilizing the available resources and services (Mwalw'a, 2013), hasty implementation, limited in-service training for teachers, inadequate ongoing professional support for teachers, and inadequate resources (Bunyi, 2013) are summative revelation by various studies among others (Muoki, 2011; Kimotho, 2011; Kamanu, 2014; Mokamba, 2015; Mukhwana et al., 2016) done on various education aspects in the universities in Kenya.

### **Statement of the Problem**

Universities in Kenya are at the centre of the education-workplace continuum and therefore are

supposed to be characterized by high quality and excellence in examinations through reevaluating their mode of assessment (CUE, 2014; World Bank, 2011). However there is a widespread perception of a decline in the quality of university examinations in Kenya due to inappropriate test setting procedures (Sifuna, 2010; Muoki, 2011; Kimotho, 2011; Obwogi, 2011; Mwalw'a, 2013; Mbirithi, 2013; Munene, 2013; Mathooko, 2013; Mokamba, 2015). It seems that there is inadequate knowledge on administrative procedures and guidelines on setting examinations (Gudo et al., 2011; Nyangau, 2014; Waitthaka, 2015; Munene, 2016). These studies focused on the role of institutional managers in quality assurance and institutional response to globalization in higher education. This leaves a knowledge gap on research on assessing internal and external moderation of setting examinations and quality of examinations. Universities need to enforce the administrative procedures in setting examinations and also follow the strict guidelines on both internal and external moderation of examinations. The feedback from moderation and colleagues should be used to improve the quality of examinations. If this is done, then it may lead to high quality of examinations whereby papers are representative of the entire curriculum, examination questions are not continuously repeated and hence questions are unpredictable (Munene, 2013; Bunyi, 2013). Universities would produce students with good grades but with poor skills, knowledge and competencies in their subject areas. This has dire effects on their integration in the job market after graduation and the quality of services provided by university graduates. Njeiah (2012) had observed that the ugly incidence of examination practices accounts for existence of several qualifying examinations in Kenya such as post university matriculation, aptitude tests, and job placement aptitude tests among others to authenticate candidate's certificates. He argues that Kenya graduates cannot even write comprehensive letters which partly blames on setting

and administration of examinations in public universities in Kenya. Academic administrators monitoring, evaluation, feedback and supervision of academic staff activities influence their work altitude and quality of examination (Morris, 2016). This study therefore sought to critically assess the internal and external moderation in setting examinations and quality of examinations in public universities in Kenya.

### Objectives of the Study

- To investigate the ways internal and external moderation affects the quality of examinations in public universities in Kenya.
- To examine the influence of university standards guideline on the relationship between administrative procedure of setting examination and quality of examinations

### Hypotheses

- $H_{a1}$ : There is significant relationship between internal and external moderation and quality of examinations in the public universities in Kenya.
- $H_{01}$ : There is no significant relationship between internal and external moderation and quality of examinations in the public universities in Kenya.
- $H_{a2}$ : There is significant influence of university standards guideline on the relationship between administrative procedure of setting examination and quality of examinations in the public universities in Kenya.
- $H_{02}$ : There is no significant influence of university standards guideline on the relationship between administrative procedure of setting examination and quality of examinations in the public universities in Kenya.

### Theoretical Framework

This study was anchored on Item Response Theory (IRT) of setting examinations as proposed by

Hambleton, Swaminathan and Rogers (1991). This theory is often used to overcome psychometric problems commonly associated with traditional methods that are currently used in standardized setting examinations and psychological measurement. The suggested theory places items and examinees on the same common metric. This allows for the spread of the items, the location, redundancy, and gapping and provides better insight into the measurement capabilities of the test.

The theory indicates that the number of acceptable items in a test can be accomplished by modifying existing items or by pilot testing additional items (Edelen & Reeve, 2007). Once developed, more advanced analysis techniques should be used to ensure an adequate number of psychometrically sound items for a test. In this regard, assessment tools and information must be made available to examiners in order to ensure maximum benefit to learners. This theory fits into this study because it focuses on examination as an assessment tool of student output.

Many test publishers, departments of education, credentialing agencies and industries have used IRT in developing examinations, identifying biased test items, equating scores from different examinations, and reporting scores because IRT provides a useful framework for solving various problems in measurement. With potential power of advanced technology, the process of estimating item parameters and examinee ability can be carried out in less time with greater precision (Hays, Morales & Reise, 2000). Computers have also been used increasingly in test administration and computer-based testing. Computer-based testing is a testing model mostly found in the university level especially those doing their studies through distance learning. This theory is relevant to this study as it is interested with the procedures of setting examinations in the public universities in Kenya.

Despite having many advantages over Classical Test Theory (CTT), IRT models are not perfect. They have some technical and practical limitations (Hambleton & Jones, 1993). Item Response Theory models are usually complex and the process of estimating their parameters are often practically difficult. Model fit can be problematic too. It is still not clear how the problems of model fit can be solved, especially problems relating to the dimensionality of the model. In practice, the technical demands for IRT models are more complicated than for CTT models. The more parameters the model employs, the more precise information they yield which increases the technical burden. Another drawback of IRT is that IRT models require large sample size for estimating parameters (Rivera, 2007). For multidimensional IRT, the sample size should be larger than 2000.

Despite the said weaknesses of this theory, this study decided to use it since the study is being done on the highest level of the education system in Kenya. Technical and practical limitation should not be a challenge as professionals in this level are highly qualified and experienced. The theory is required at this level of education system to ensure that products in terms of university graduates it sends to the field of work and community has what it takes to deliver to the society. The departments to be studied have large student numbers and are key to the economic and societal well-being of this country.

Adaptive testing means using test items adapted or tailored to examinee’s level of ability. In other words, in adaptive testing, items are selected to match with the examinee’s ability. Matching test items to examinee’s ability requires a large pool of items whose parameters are known. Item Response Theory models are particularly suitable for adaptive testing because they can be used to create a pool of test items whose obtained parameters are examinee invariant. Another reason why IRT models are suitable for adaptive testing is that they can be used

to estimate examinees’ abilities that are independent of the particular set of items administered. Even though each examinee received a different set of items with varying difficulty, IRT models provide framework for comparing estimated abilities across examinees. This is what happens to the university graduates from various universities who undergo different course outlines for the same course as per their specific university.

### Conceptual Framework

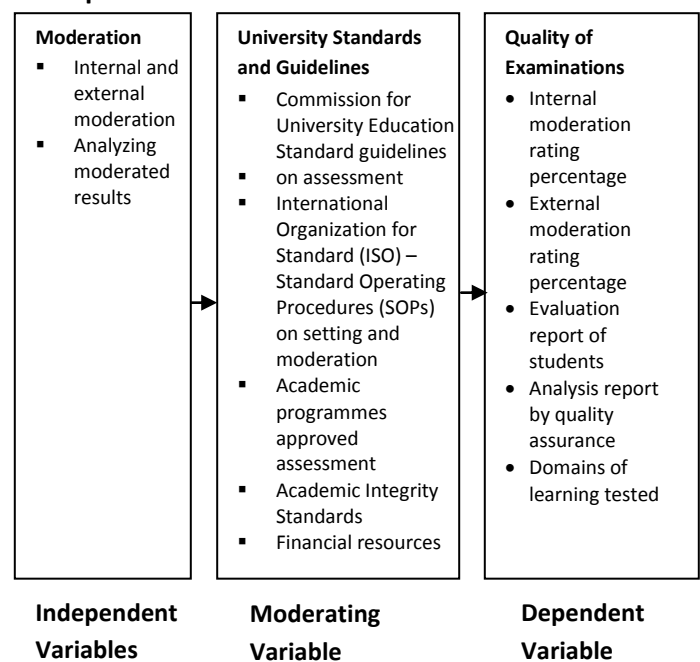


Figure 1: Conceptual Framework

### REVIEW OF RELATED LITERATURE

#### The Institutional Theory

The institutional theory describes how institutions survive and succeed through congruence between an institution and the expectations from its environment. The institutional view argues that organizations need legitimacy from their stakeholders. Institutions perform well when they are perceived by the larger environment to have a legitimate right to exist. The institutional view believes that institutions adopt structures and processes to please outsiders and these activities

come to take on rule-like status in institutions. Draft (2007) adds that institutions consider the processes by which structures, including schemes, rules, norms, and routines, become established as authoritative guidelines for social behavior. Jaffee (2004) concludes that different components of institutional theory explain how these elements are created, diffused, adopted, and adapted over space and time towards achieving improved quality performance. The theory examines the rules, norms and routines that become established as authoritative guidelines for social behavior. However it does not give the guidelines on how they are determined, developed, implemented, monitored and maintained in order to improve quality performance and also remain relevant in a dynamic world. The theory explains that elements have to be created, diffused, adopted, and adapted over space and time.

This theory was used by Mokamba (2015) in a study that sought to establish the influence of the Quality Management System on the performance of Kenyan public universities in terms of funding mobilization, administrative systems, infrastructure, admission and teaching systems. Data was collected from seven certified public universities in Kenya. The study targeted responses from administrators and academicians from the seven certified public universities in Kenya. One hundred and fifty one (151) responses were obtained. The study utilized primary data that was collected using questionnaires.

The theory was relevant for the current study which looked at external and internal procedure guidelines policies, implementation and monitoring systems of setting examinations in public universities in Kenya. This is because the institutional culture of each university plays an important role on how academic staff utilize the setting guidelines as documented when undertaking examinations setting, moderation and implementation of feedback as given by external moderators and quality assurance analyzed

information on examinations. This theory should be utilized by the academic administrators to effectively and purposely play their role of guidance, monitoring, evaluation and feedback provision to academic staff. To know that what is shared as a good researched document by the regulator of education, the commission for university education to ensure well laid down broken step by step systematically procedures for setting examination for ease of understanding ,requires collaborative participation for all stakeholders to ensure they are used as intended. Whereas if left as standard guidelines and policies for universities, they just become documents on the shelves and academic staff continue to follow the good will of institutional culture within the universities as status quo when setting examinations. This theory was for support information 'what should and what we do'.

### **Empirical Studies**

#### **Effect of Internal and External Moderation on Quality of Examinations**

Moderation has been defined as a quality assurance process directed at ensuring accuracy, consistency and fairness of assessments. There are two primary reasons for engaging in moderation of assessments and both are related to issues of quality. As a method of ensuring accountability, moderation enables an official confirmation of assessment quality. Secondly, moderation seeks to ensure the improvement of the quality of assessment by developing the preparedness and capability of the academic staff (Hughes, 2008). Learning objectives represents what the learner is to learn. This is a critical component as it shows what the academic staff is to teach. Objectives are based on goals, scopes and sequence of curricular materials being developed. Objectives reflect the behaviour change expected from a learner and can be used for assessing student capacities at the beginning of learning, and for determining resources available for teaching (Moore, 2014). The purpose of moderating an examination is to help

ensure that it achieves the normal goals of end-of-course assessment (Moore, 2014).

Moderation 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).

A study by Goos and Hughes (2010) through an online survey involved 380 academics from various universities. The study involved questions related to the procedures of carrying out moderation. The study found out that while moderation was an activity considered to support professional learning, managerial accountability was seen to inhibit assessment practices. Most lecturers chose to stay within safe and easily managed modes of assessment. The study used only a quantitative method to obtain data from academics from different universities. The current study focused on the different ways and frequency the public universities in Kenya carried both internal and external moderation of examinations before they were done by the students.

### **Quality of Examinations Standards Guidelines and Procedures**

Quality of examination is important in enabling learning outcome. A study by Adedoyin (2013), on public examinations and its influence on the Botswana educational system. Using an exploratory survey study and a questionnaire administered to a total number of two hundred (200) Undergraduate Education Students at the University of Botswana and responded by 186. It was analyzed using descriptive statistics and one sample population t-test. The findings of this research study indicated that quality of examination is a measure of educational outcomes thus having both positive and negative influences on students. Stakeholders in education have been concerned about the influence of public examinations on teaching and learning outcomes. The study

suggested that quality examination improves quality of education and the overall enhancement of teaching and learning. This current study then sought to confirm from academic staff and academic administrators how they ensured quality in the setting of examinations and standard guidelines and procedures in use.

In a study on practices of assessing graduate students' learning outcomes in selected Ethiopian higher education institutions, Chalchisa (2014) employed a survey method in collecting data from 131 instructors, which were selected with stratified sampling. Questionnaire and interview were used as instruments for collecting data. The results showed that there were no significant differences among instructors from different field of study and frequent use of assessment results for improving learning. Also no significant mean differences were observed in teaching experiences and quality of examinations. However, significant differences were observed among the mean scores of the above three variables by academic rank with better use of assessment strategies, different types of test items by lecturers than professors and associate professors for quality of examinations. The study further suggested that professors and associate professors should pay attention to the assessment of students learning through quality of examination development.

### **METHODOLOGY**

This study used mixed method research design specifically the concurrent triangulation mixed method design. In this design, both quantitative and qualitative data are collected at the same time and then analyzed concurrently and conclusions are drawn. The study was conducted within five public universities in Kenya namely University of Nairobi, Kenyatta University, Egerton University, Moi University and Masinde Muliro University. The universities were chosen because they were oldest



universities in the country and therefore have more information in regard to setting examinations. The researcher purposively sampled 5 universities from the 22 public universities in Kenya. The total number of academic staff in the 5 sampled universities was 4,134 people. The lecturers formed a major subgroup for the study as they were the main evaluators of the curriculum. They set the examinations, moderate, administer them, mark and grade them. The researcher also purposively sampled the deans of faculties that were involved in the study. All the five deputy registrar examination and administration from the respective participating universities were purposively included in the study. Registrar academic and students affairs who had been in the office for at least over one year in the participating universities were purposively sampled giving a total of five respondents. Internal Quality assurance officers from the participating universities were purposively sampled and included in the study.

The study used questionnaires, interview guides and document analysis guides to collect data. The study exploited more than one method of data collection in order to enhance generation of deeper and broader insights on the area of study and also enable confirmation and validation of the collected data (Patton, 1990, 2002; Yin, 2003). The questionnaire for lecturers consisted of both closed and open ended questions. Both quantitative and qualitative data analysis procedures were used to analyze data.

## **FINDINGS**

### **Internal and external moderation on the quality of examinations**

The application and effect of both internal and external moderation was important for the study. According to Hughes (2008) moderation can be defined as a quality assurance process directed at ensuring accuracy, consistency and fairness of assessments which enables an official confirmation of assessment quality and also seeks to ensure the improvement of the quality of assessment by developing the preparedness and capability of the academic staff. There are several options that a moderator may exercise in respect of approving question papers. The moderator may approve the question paper; approve with amendments to be made without a re-submission of the question paper required; or approve with amendments to be made and re-submitted for final approval. In the worst case scenario, a question paper may be rejected and the examiners instructed to set a new question paper (Ogunji, 2011; Umalusi, 2017). Question papers may have to be re-submitted two or three times until the external moderator is convinced that the appropriate standard has been attained. An analysis of the number of times that papers have to be submitted for moderation is relevant, both in respect of time and cost. Basing on this argument, the study developed statements geared towards providing more information on understanding the extent to which moderation process is undertaken in the surveyed universities where respondents were to gauge on a Likert scale where 1=very small extent to 5=very large extent.

**Table 1: Internal and external moderation on the quality of examinations (n=167)**

| Frequency of internal and external moderation  | N   | VSE<br>% | SE<br>% | ME<br>% | LE<br>% | VLE<br>% | M     | SD    |
|--|-----|----------|---------|---------|---------|----------|-------|-------|
| There is continuous internal evaluation of examinations activities by quality assurance officers in my university every semester   | 167 | 11.4     | 22.2    | 25.7    | 20.4    | 20.4     | 3.162 | 1.296 |
| There is continuous internal moderation of examinations question paper by internal examiners in my university for every semester   | 167 | 7.8      | 24.0    | 21.0    | 19.2    | 28.1     | 3.359 | 1.323 |
| There is continuous external moderation of examinations question paper by external examiners in my university for every semester   | 167 | 9.6      | 25.1    | 16.8    | 22.8    | 25.7     | 3.299 | 1.347 |
| Commission of university education guidelines and regulations are taken into consideration during examination question paper moderation process every semester                         | 167 | 5.4      | 21.0    | 31.7    | 21.0    | 21.0     | 3.311 | 1.177 |
| University ISO and QMS- Standard Operation Procedures (ISO-QMS-SOPs) regulations are taken in to consideration during the moderation of examinations question paper for every semester | 167 | 5.4      | 22.2    | 26.3    | 21.6    | 24.6     | 3.377 | 1.225 |
| Moderation activities includes checking the quality and standards of questions and proof reading to ensure that there are no grammatical and technical errors in every semester        | 167 | 7.2      | 21.6    | 22.2    | 18.6    | 30.5     | 3.437 | 1.315 |
| Moderation are provided with question paper- marking scheme during paper moderation before examination administration  | 167 | 10.8     | 24.6    | 19.2    | 28.7    | 16.8     | 3.162 | 1.272 |
| External moderation are competitively selected and recruited   | 167 | 3.6      | 13.2    | 21.0    | 32.9    | 29.3     | 3.713 | 1.131 |
| Overall Mean Score   | 167 | 7.7      | 21.7    | 22.9    | 23.2    | 24.6     | 3.353 | 1.261 |

*NB: VSE=Very Small Extent; SE=Small Extent; ME=Moderate Extent; LE=Large Extent; VLE=Very Large Extent*

The results from Table 1 depicted the influence of internal and external moderation on quality of examinations, revealing an overall mean score of 3.353 and standard deviation of 1.261. This was a moderate index implying that internal and external moderation were not consistently carried out in the universities. A study by Goos and Hughes (2010) found out that while moderation was an activity considered to support professional learning, managerial accountability was seen to inhibit assessment practices. Most lecturers chose to stay within safe and easily managed modes of assessment. On the individual influence of statements of moderation, it was established that the statement that external moderators are competitively selected and recruited had a mean score of 3.713 and standard deviation of 1.131. This implied that universities involved well selected external moderators through competitive recruitment process. This was closely followed by the statement that moderation activities includes checking the quality and standards of questions and proof reading to ensure that there are no grammatical and technical errors in every semester with a mean score of 3.437 and standard deviation of 1.315. This implied that universities involved external moderation during standardization of examinations to ensure that they have quality.

The respondents also indicated that there was continuous internal moderation of examination questions paper by internal examiners in the university for every semester ( $M= 3.359$ ,  $SD=1.323$ ). There was continuous external moderation of examination questions paper by external examiners in the university for every semester ( $M= 3.299$ ,  $SD=1.347$ ). The main role of the moderator pre-examination is to moderate all questions of the examination paper, paying particular attention to clarity and mechanics of language and spellings and in collaboration with the Examiner, he/she may modify, change or even replace a question. This was done

with internal moderation being done more than external moderation on each semester.

The respondents also agreed though to a moderate extent that University ISO and QMS- Standard Operation Procedures (ISO-QMS-SOPs) regulations are taken in to consideration during the moderation of examinations question paper for every semester ( $M=3.377$ ,  $SD=1.225$ ). It was also established that commission of university education guidelines and regulations are taken into consideration during examination question paper moderation process every semester ( $M=3.311$ ,  $SD=1.177$ ). This signified that the procedure guideline reference documents were referred to during moderation. These were internal university procedure documents as done for ISO certification and the regulator standard procedure and guideline documents as given by the commission for university education.

However the statement with low means included; there was continuous external moderation of examinations question paper by external examiners in my university for every semester (Mean=3.299,  $SD=1.347$ ), moderators were provided with question paper- marking scheme during paper moderation before examination administration (Mean=3.162,  $SD=1.272$ ). This implied external moderation was not done on the paper and paper marking scheme during the same time. According to a study by Evans (2013) avers that it is possible to enhance the quality of lecturers' assessments through moderation processes that support professional development. Moderation will give dependable information about students' performance across the wide range of objective of course and overall objective of education.

Then the statement that there was continuous internal evaluation of examinations activities by quality assurance officers in my university every semester (Mean=3.162,  $SD=1.296$ ). This implied that internal evaluation of examination activities by quality assurance officers were not necessary done each semester. According to a study by Mokamba, Oloko and Letting (2014), quality assurance is an

important aspect in a university thus demonstrated that Quality Management System (QMS) played a huge influential role on administrative systems and the performance of Kenyan public universities. This meant that administrative systems, with the influence of QMS as a moderating factor had a positive contribution to the change in the performance of Kenyan public universities.

Majority of the deans revealed that external moderation on the question paper was done only on second semester and hence once per year. Some agreed that in some universities faculty/department question papers are never moderated externally before they are administered. That question papers moderation was done alongside script moderation on the second semester or at the end of the year in a hotel. This shows that proper procedures of examination moderation are not followed at the universities as reported by the first operational coordinators and supervisors.

According to Bloxham (2009) moderation can support standardized teaching practices and aims to support standardized teaching practices that ensure quality. The argument challenges a number of assumptions underlying marking of student work in British universities. It argues that, in developing rigorous moderation procedures, there is creation of a huge burden for markers which adds little to accuracy and reliability but creates additional work for staff, constrains assessment choices and slows down feedback to students. It is therefore suggested that moderation practice divert this energy into productive activities with useful outcomes for learning and assessment outcomes.

The internal moderation being a departmental affair, the experts within do the correction and adjustments to the question and write report which accompanied the examination papers to the examination office

every semester as had been quoted by dean in university D. From the examination office, the comments were effected from the reports and printed final work given to the lecturers to proofread a day to examination date before massive copies were photocopied as had revealed by quality assurance officer in university D. This practice concurred with argument that the process of moderation commonly occurs after marking commonly in the university practice, with moderation usually carried out by sampling, to check the quality of the whole (Kuzich, Groves, O'Hare & Pelliccione, 2010). Hence moderation was done as quality control and not as quality assurance by the external examiners (McDonald, 2016).

The study further determined if there was any significant relationship between internal and external moderation frequency and quality of examinations using the t-test statistic. The following hypotheses were tested;

$H_{a1}$ : There is significant relationship between internal and external moderation and quality of examinations in the public universities in Kenya.

$H_{01}$ : There is no significant relationship between internal and external moderation and quality of examinations in the public universities in Kenya.

The decision rule was that reject  $H_0$  if the test statistic is extreme, either larger than an upper critical value or smaller than a lower critical value at 95% confidence level. The results were indicated on Table 2.

**Table 2: One-Sample Statistics for internal and external moderation**

| One-Sample Statistics            |  |        |        |                 |                 |   |
|----------------------------------|--|--------|--------|-----------------|-----------------|---|
|                                  |  | N      | Mean   | Std. Deviation  | Std. Error Mean |   |
| Internal and external moderation |  | 167    | 3.3525 | 1.04125         | .08057          |   |
| One-Sample Test                  |  |        |        |                 |                 |   |
|                                  |  | T      | df     | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |
|                                  |  |        |        |                 | Lower           | Upper                                     |
| Internal and external moderation |  | 41.608 | 166    | .000            | 3.35254         | 3.1935 3.5116                             |

The results given (df=166, p<0.05)

The significant value 0.000 was less than the p-value 0.05. Since 0.000<0.05, it was concluded from the test that there was evident significant relationship between the means. Therefore, the null hypotheses was rejected and the alternative accepted. Further output gave an estimate for the mean difference between the two means (3.35254). Therefore on examining the effect of frequency of internal and external moderation on quality of examinations, we can say frequency of internal and external moderation had an evident direct effect on the quality of examinations. Bloxham and Boyd (2007) concurred with these findings after concluding that moderation of assessment ensured that assessment was fair, valid and reliable, requiring appropriate assessment activities and accurate assessment decisions. They argued that a valid assessment assesses what it sets out to assess, and not something else. The findings showed that moderation is an appropriate way to assess the learning outcomes that it should be addressing and also examination quality to measure such outcome, whereas a reliable assessment activity gives results that are a consistent and accurate picture of what is measured. The study further argued that there are two main reasons for moderation: accountability and improvement. Rigorous moderation of assessment may be categorized as a good practice improvement that lies between risk avoidance and quality enhancement as normative quality Assurance. Therefore learning

activities may be continuously enhanced through quality monitoring such as the internal moderation of student assessments. There was clear outcome that both academic staff and academic administrators were not sure of what moderation is made to achieve in question paper. It was clear and evident that the three phases of moderation were not done and monitored as required to result to quality improvement for quality of examinations during setting stage. The three phase being: assessment design and development before assessment is set; implementation, marking and grading done before marks are allocated; and review and evaluation when marks have been allocated (ALTC, 2012b). There was also evidence gap on knowledgeable and better leadership in line with McDonald (2016) assessment moderation as a quality management process require better leadership, more training and stronger commitment.

**University Standards and Guidelines**

The study also sought to investigate the moderating effect of university standards and guidelines on the relationship between administrative procedure of setting examination and quality of examinations. The university standard and guidelines included Commission for University Education (CUE) guidelines and the International Organization for Standardization ISO and Standard Operating Procedures (SOPs) on setting and moderation of examinations.

**Table 3: University standards and guidelines, administrative procedures and quality of examinations (n=167)**

|  | N   | C    | R    | S    | RA   | NA   | M      | SD    |
|--|-----|------|------|------|------|------|--------|-------|
| Commission of university education guidelines and regulations are taken into consideration during examination question paper moderation process every semester                         | 167 | 5.4  | 21.0 | 31.7 | 21.0 | 21.0 | 3.311  | 1.177 |
| University ISO and QMS- Standard Operation Procedures (ISO-QMS-SOPs) regulations are taken in to consideration during the moderation of examinations question paper for every semester | 167 | 5.4  | 22.2 | 26.3 | 21.6 | 24.6 | 3.377  | 1.225 |
| CUE audit feedback is shared to the lecturers on time for improvement once done  | 167 | 17.4 | 21.6 | 19.8 | 28.1 | 13.2 | 3.0180 | 1.315 |

The academic staff agreed to a moderate extent (M=3.377, SD=1.225) that University ISO and QMS-Standard Operation Procedures (ISO-QMS-SOPs) regulations were taken in to consideration during the moderation of examinations question paper for every semester. It was also established that Commission of University Education (CUE) guidelines and regulations were taken into consideration during examination question paper moderation process every semester (M=3.311, SD=1.177). This signified that the procedure guideline reference documents were referred to during moderation. These were internal university procedure documents as done for ISO certification and the regulator standard procedure and guideline documents as given by the Commission for University Education. There was moderate response regarding CUE audit feedback being shared to the lecturers on time for improvement once done (Mean=3.018, SD=1.3147). This moderate response was due to the fact that most universities did not have external moderation of the question paper every semester but during the second semester, which limited feedback utilization by the academic staff for improvement. According to Commission for University Education in Kenya (2014), the policy on the assessment procedures that all universities

should adhere to in setting examinations and administration include clear guidelines on setting, moderating, administration, marking and processing examinations results. The policy further indicates that the university administration should put in place a mechanism for receiving feedback from stakeholders on the programmes and undertake periodic self-assessment to address the requirements of stakeholders. Furthermore, mechanisms for evaluating the expected learning outcomes including the process, inputs, quality assurance, achievements, graduates, stakeholders, and analysis of strengths and weaknesses should also be put in place.

The study further determined if there was any significant influence of university standards guideline on the relationship between administrative procedure of setting examination and quality of examinations using the t-test statistic. The following hypotheses were tested;

Ha<sub>2</sub>: There is significant influence of university standards guideline on the relationship between administrative procedure of setting examination and quality of examinations in the public universities in Kenya.

H<sub>02</sub>: There is no significant influence of university standards guideline on the relationship

between administrative procedure of setting examination and quality of examinations in the public universities in Kenya.

The decision rule was that reject  $H_0$  if the test statistic is extreme, either larger than an upper critical value or smaller than a lower critical value at 95% confidence level. The results are indicated on Table 4.

**Table 4: One-Sample Statistics for university standards guideline**

| One-Sample Statistics          |  | N   | Mean   | Std. Deviation | Std. Error Mean |
|--------------------------------|--|-----|--------|----------------|-----------------|
| university standards guideline |  | 167 | 3.2355 | 1.08742        | .08415          |

| One-Sample Test                |  | T      | Df  | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |        |
|--------------------------------|--|--------|-----|-----------------|-----------------|---|--------|
|                                |  |        |     |                 |                 | Lower                                     | Upper  |
| university standards guideline |  | 38.451 | 166 | .000            | 3.23553         | 3.0694                                    | 3.4017 |

The results given (df=166, p<0.05)

The significant value 0.000 was less than the p-value 0.05. Since 0.000<0.05, it was concluded from the test that there was evident significant relationship between the means. Therefore, the null hypothesis

was rejected and the alternative accepted. Further output gives an estimate for the mean difference between the two meant (3.23553).

### Quality of Examinations Measurements

**Table 5: Quality of examinations measurements (n=167)**

| Quality of examinations measurements   | N   | NE  | R   | S    | MT   | A    | M     | SD   |
|--|-----|-----|-----|------|------|------|-------|------|
|  |     | %   | %   | %    | %    | %    |       |      |
| The questions are clear and stated clearly for the students to understand each semester                              | 167 | 1.2 | 0.0 | 3.0  | 36.5 | 59.3 | 4.527 | .675 |
| The instructions are clear and stated clearly for the students to understand each semester                           | 167 | 1.2 | 1.2 | 1.2  | 47.3 | 49.1 | 4.419 | .697 |
| The questions do not have errors in terms of typing errors, misspelt words, unclear graphics or grammatical mistakes | 167 | 1.8 | 1.2 | 17.4 | 49.7 | 29.9 | 4.048 | .827 |
| The questions cover at least 75% of the course content for the unit taught each semester                             | 167 | 0.6 | 2.4 | 10.8 | 53.3 | 32.9 | 4.156 | .752 |

|   |     |       |       |      |      |      |       |        |
|---|-----|-------|-------|------|------|------|-------|--------|
| The questions are competency based and test both theory and practical aspects of the teaching each semester | 167 | 1.8   | 2.4   | 13.2 | 47.9 | 34.7 | 4.114 | .853   |
| The questions are based on the learning objectives of the course  | 167 | 1.2   | 3.0   | 10.2 | 50.3 | 35.3 | 4.156 | .814   |
| The questions follow the Bloom's taxonomy each semester   | 167 | 0.6   | 21.6  | 25.1 | 29.3 | 23.4 | 3.533 | 1.091  |
| The questions test the affective domains of learning each semester  | 167 | 0.6   | 22.2  | 23.4 | 34.7 | 19.2 | 3.497 | 1.0578 |
| The questions test the psychomotor (skills) domains of learning each semester                               | 167 | 2.4   | 20.4  | 25.7 | 31.1 | 20.4 | 3.467 | 1.102  |
| The marks are allocated proportionately on each question  | 167 | 1.2   | 2.4   | 15.6 | 37.7 | 43.1 | 4.192 | .871   |
| The questions are standardized according to the level of students each semester                             | 167 | 1.8   | 1.8   | 4.2  | 48.5 | 43.7 | 4.305 | .789   |
| Overall Mean Score  | 167 | 1.309 | 7.145 | 13.6 | 42.4 | 35.5 | 4.038 | 0.866  |

NB: NE=Never; R=Rarely, S=Sometimes; MT=Most times; A=Always

The results showed an overall mean score of 4.038 and standard deviation of 0.866. This was a strong mean score indicating that the measurements of examination quality were well understood and followed by the lecturers in the surveyed public universities. Those measures that showed high mean score included; the questions were clear and stated clearly for the students to understand each semester (Mean=4.527, SD=0.675), the instructions were clear and stated clearly for the students to understand each semester (Mean=4.419, SD=.697), the questions were standardized according to the level of students each semester (Mean=4.305, SD=.789). This was a very good measure of quality of examinations as the study as shown that what was done in examination was mostly proofreading to eliminate errors. The study also learned that only one examination was set hence lecturers were sure of the examination to be administered is the examination they had set for that semester. The question papers were hand written and any slight change done on the paper, the lecturer get to know it during proofreading before massive question paper production at the examination

centers. Moderation as proofreading was done to ensure examination had quality, but did not eliminate all the errors in term of typing errors, misspelt words, unclear graphics or grammatical mistakes as this had 79.6%, leaving errors at 20.4% confirmed by calculated (Mean=4.048, SD=0.827) . This could be attributed to the proofreading being done just for hours at examination office before printing or photocopying of question papers in masses. This could also be due to papers which were submitted late hence had not gone for moderation. This could also be due to papers which had not been identified as having been corrected having not been proofread. The study further established that most times the marks were allocated proportionately on each question (Mean=4.192, SD=.871). However on mark allocation per question, a look at set question papers as shared sample to check on the guide for mark allocation, the question paper could not guide, as the questions were not specific how many points the student were to discuss or explain. There was no marking scheme during paper submission which could guide to confirm the marks allocation as being



balanced to the question requirement. According to the dean/head of department the marking scheme was submitted to the office by the academic staff once examination had been marked together with the scripts and that none was available for confirmation as a document to the researcher, due to said archiving challenge. This was in contradiction to the laid down university standards and guideline 2014 on setting and moderation of examination which requires examination paper to be submitted together with the question paper marking scheme (commission for university education, 2014). This contradicted item response theory in that there are no guides on how each mark had been allocated on the question paper for weight nor were there marking schemes. The validity theory was also violated due to absence of the marking scheme, required for use during moderation to validate the question answers responses adequacy and weight. This too was not in agreement with the internal university ISO-Standard Operating Procedures as documented neither as given in a strategic plan (Euchararia, 2012; Gudo *et al.*, 2011). The study further established that the questions covered at least 75% of the course content for the unit taught each semester (Mean=4.156, SD=.752), questions are based on the learning objectives of the course (Mean=4.156, SD=.814.) and that the questions are competency based and test both theory and practical aspects of the teaching each semester (Mean=4.114, SD=.853). This was also a positive response from the academic staff as they know what is expected of them to set quality examination. However they did not submit the course outline, the marking scheme with the question papers to the dean/head of department to be assembled to the moderators to confirm with. Content coverage being at least 75% on the question paper each semester (Mean= 4.156, SD=.752) and learning objectives being the guide for action verb

used and to ensure each topic was tested (Mean= 4.156, SD= .814). This was a good mean to ensure quality of content coverage and learning objectives. This was so as the individual university examination guideline had given the acceptable percentage as at least 75%. Despite this positive response on content coverage and learning objectives how the administrators verified that the content and learning objective had been done, any retained or maintained document was not available. This was so as the academic staff only submitted only question paper alone without any attachment during delivery to dean/head of department.

The statements that showed low mean score are; the questions follow Bloom's taxonomy each semester (Mean=3.533, SD=1.0910), the questions test the affective domains of learning each semester (Mean=3.497, SD=1.0578) and the questions test the psychomotor (skills) domains of learning each semester (Mean=3.467, SD=1.102). The low mean for testing cognitive domain as by Bloom's taxonomy, affective domain and psychomotor domains contradicted the statement that the questions are competency based and test both theory and practical aspects of the teaching each semester (Mean=4.114, SD=.853). This is a pointer to the training aspects on the techniques of setting examination where the terminologies with low means are used. Hence setting questions which tested all domains of learning for knowledge, skill/Strategies and disposition/values was low either due to minimal understanding on how to do it. An unintended revelation from the collection of questionnaires which had been dropped for picking later, most academic staff who had not done education and had not been trained on examination had to wait to be explained what Bloom taxonomy, psychomotor and affective domain were for them to respond.

**Table 6: Summary of research hypotheses test results**

| <b>Objective</b>  | <b>Hypothesis</b>  | <b>P-value</b> | <b>Comment</b>   |
|---|--|----------------|--|
| To investigate the ways internal and external moderation affects the quality of examinations in public universities in Kenya.                                       | H <sub>01</sub> : There is no significant relationship between internal and external moderation and quality of examinations in the public universities in Kenya.   | 0.000          | Internal and external moderation is a predictor of quality of examinations<br>H <sub>01</sub> was rejected.                    |
| To examine the influence of university standards guideline on the relationship between administrative procedure of setting examination and quality of examinations. | H <sub>02</sub> : There is no significant influence of university standards guideline on the relationship between administrative procedure of setting examination and quality of examinations in the public universities in Kenya. | 0.000          | University standards guideline on the relationship between administrative procedure of setting<br>H <sub>02</sub> was rejected |

**CONCLUSIONS AND RECOMMENDATIONS**

**Conclusions**

It was concluded internal and external moderation were moderately carried out in the universities. External moderation were competitively selected and recruited and that moderation activities included checking the quality and standards of questions and proof reading to ensure that there were no grammatical and technical errors in every semester. Additionally, the external moderators ensured that all the question papers had been translated appropriately where need be, all the diagrams and sketches in place so that the examinations was ready for printing. The conclusion was that the external moderation on the question paper which was avoided should be done on all papers. The question papers that are submitted to external moderators must be in the final, print ready version and not papers having writing from internal moderation comments. This is to enable external examiner react to the right question appropriately and to eliminate all errors. External examiner should be the ones to do the final proofreading and not the original setter of the questions. This will ensure all their comments are taken to consideration without some being negated

back to the original format for convenience by the setter during proofreading.

It is further concluded that internal moderation within the department should involve all academic staff who facilitated the students and submitted examinations. This was not the practice. They should provide question paper marking scheme, course outline and table of specification during paper moderation alongside the question paper. This internal moderation should be done as a conveyer belt or done in a manner to ensure each is exposed to all the papers and have signed to ensure confirmation of content. Internal moderation should be done using moderation checklist for guidance on what is expected. The moderation checklist should be developed using benchmarked best practices.

The study concluded that internal evaluation of examination activities by quality assurance officers are not necessarily done each semester in the public universities. This should be done every semester by quality assurance to enforce the culture of compliance. There active involvement in examination is very crucial since quality of education cannot be separated from examination. They should ensure examinations are given to an appointed external examiner from another university who is given the

examination paper and all required documents as set by the course lecturer, internally moderated in a panel plus the internal moderation report/checklist and documents from the head of department.

Faculty/departmental culture was based on its leadership. Planning was very crucial to avoid work overload which get sighted as a cover for lack of examination ethics. Dean/head of department should have factual data on academic staff numbers and student numbers for ratio determination. This will lead to setting of examination following guidelines without thinking of how you will marker if you set a quality examinations. Lead to inclusion of important section of the content which require practical application of knowledge and not the recall content for ease of marking and for setting of more than one examination paper for choice. Dean/Head of department leadership determined how internal moderation was done, either few select or involving all. The procedures and guidelines require all as it is a professional learning experience and coaching/mentorship opportunity.

Deputy registrar examination administration and the registrar academic and students affairs delegated their roles on external examiner identification though competitive interviews or open advertisement to the deans. They should pass the information and lobby for Deputy Vice-chancellor and Vice-chancellor support for objective engagement of external examiner, who will work independently without halo effect on who brought or recommended them. They should lobby for resources to ensure the external moderation is done each semester and on all the papers. When internal and external moderation is done by professionally qualified examiners it guarantees quality of examinations.

The University ISO and QMS- Standard Operation Procedures (ISO-QMS-SOPs) regulations are not fully taken in to consideration during the moderation of examinations question paper for every semester.

In establishing the quality of examination basing on statements depicting feedback utilization, the study

concluded that the role of moderation should ensure accuracy, consistency and fairness of assessments which enables an official confirmation of assessment quality and also seeks to ensure the improvement of the quality of assessment by developing the preparedness and capability of the academic staff.

### **Recommendations**

On moderation, the Deans/ head of department need to initiate capacity building programs and refresher trainings on moderation of examination among his teaching staff with support of evaluation analysis and quality assurance officer/director inputs. The Commission for University Education (CUE) should reinforce the implementation of the stipulated guideline on examination setting and moderation, working closely with internal university quality assurance directors, deputy registrar examinations and the deans. The commission should also budget and plan for seminars with deputy registrar examinations and the deans as it does for registrars and quality assurance. They will ensure the information is passed to the technical coordinator for effective sharing with the academic staff. This will help curb the challenge that most of the academic staff in universities rely on tacit knowledge obtained through the experience of assessing rather than knowledge derived from training in designing examination.

To ensure effective and efficient coordination of procedures and guidelines the university council should endeavor to appoint competent staff in the positions of academic administrators who are qualified to oversee the teaching/learning, setting/moderation, monitoring/ evaluation and feedback processes as done as required. It should look at both academic and professional competence and experience. As the academic administrators need to be leaders, to support the continuation of practice and consistency of practice across an entire course of study.

Finally to ensure quality of examination is an involving activity and all stake holders should play

their role with a lot of dedication and commitment. The resources will never be enough hence we should not procrastinate for the good of our education system.

### **Suggestions for Further Research**

More research needs to be done in the area of internal and external moderation of setting examination to ensure quality of examinations as a comparative study between both public and private universities in Kenya. This will give more insight on

how the two categories of universities apply their overall outcome compared as a result of quality of examinations.

This study did not involve the students in examining the internal and external moderation of setting examination and quality of examination. Therefore there should be a study done with students' response on how they perceive the quality of their university examination. This would be an important input for feedback as students are important stakeholders.

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