

INFLUENCE OF EXAMINATION SETTING PRACTICES ON ACADEMIC INTEGRITY IN PUBLIC TERTIARY INSTITUTIONS IN MANDERA COUNTY, KENYA

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ABSTRACT

Statement of the Problem: Examination setting is one of the major means of determining the kinds of tests students need to undertake in both general and specific areas of studies. This is possible through effective examination setting practices with much integrity. However, there have been high levels of malpractice this creates doubts as to the levels of management of every step of the examination process.

Purpose of the Study: Thus, the purpose of this was to study to examine the influence of examination setting practices on academic integrity in public tertiary institutions in Mandera County, Kenya.

Methodology: This research employed mixed methodology and the concurrent triangulation research design. The target population consisted of 1394 respondents, including three principals and 150 College Tutors, seven Examination Officers and 1234 students from which 462 respondents were sampled using Yamane's Formula. From this sample, three principals and seven examination officers were chosen using purposive sampling. Conversely, from each college, 150 tutors were selected using purposive sampling and about 303 students were selected randomly. Through the application of this sampling procedure, the researcher successfully obtained a sample comprising three principals, seven examination officers, 150 teachers and 303 students. Qualitative data were analyzed thematically in line with the study objectives and presented in both verbatim and narrative formats. For the quantitative data, a descriptive analysis was conducted, utilizing frequencies and percentages. Inferential statistics were also done using Pearson's Product Moment Correlation Analysis using Statistical Package for Social Sciences (SPSS Version 23) and presented in tables.

Findings: The study established that many public tertiary institutions rarely adhere to examination setting practices as a strategy for improving academic integrity.

Recommendations: The study recommends that tertiary institutions and other education stakeholders should organize for training of college tutors in order to acquire pre-requisite skills in setting examinations. This may enable them master the practices and procedures for setting standard examinations.

Keywords: *Academic integrity, examination setting practices, public tertiary institutions*

INTRODUCTION

Academic integrity is the commitment to and demonstration of honest and moral behavior in an academic setting. According to Forsyth (2016), it is the expectation that teachers, students, researchers and all members of the academic community act with honesty, trust, fairness, respect and responsibility. In primary school context, academic integrity entails the expectation that learners and teachers uphold the rules and regulations governing the administration of examinations. However, attaining academic integrity has been a challenge in many primary schools worldwide. Forsyth (2016) further indicates that academic dishonesty may be more widespread than one can imagine.

In the Netherlands, for example, a report by Beguin and Ehren (2011) shows that cases of examination cheating and other forms of dishonesty or malpractice stand at 23.8%. In Pakistani, examination integrity rates are also low at 65.9% (Bhatti, 2013). To mitigate these challenges, heads of schools have introduced a raft of examination setting practices. There are certain criteria that a good examination must satisfy; they include objectivity that is free from scoring subjectivity or scoring biases. Beguin and Ehren (2011) argue that, for this to be accomplished it means that the tasks in the exams must be very definitive such that the reasons for awarding or withholding a mark are obvious both to the tutor and student. In a study conducted in the New Jersey, Walsh and Betz (2005) posited that when a test developer constructs a test, the amount of time and effort is dependent upon the significance of the test itself, the proficiency of the test taker, the format of the test, class size, deadline of test, and experience of the test developer. The process of test construction has been greatly aided in several ways. For one, many test developers were themselves students at one time, and therefore are able to modify or outright adopt test questions from their previous tests (Walsh & Betz, 2005).

In some countries such as the United States of America, book publishers often provide teaching packages that include test banks to university instructors who adopt their published books for different subjects (Zoeckler, 2007). These test banks may contain up to four thousand sample test questions that have been peer reviewed, time tested and moderated. The instructor who chooses to use this test bank would only have to select a fixed number of test questions from this test bank to construct a test. As with test constructions, Zoeckler (2007) asserted that the time needed for a test taker to prepare for a test is dependent upon the frequency of the test, the test developer, and the significance of the test. In general, non-standardized tests that are short, frequent, and do not constitute a major portion of the test taker's overall course grade or score

require do not require the test taker to spend great amounts preparing for the test. Conversely, non-standardized tests that are long, infrequent, and do constitute a major portion of the test taker's overall course grade or score usually require the test taker to spend great amounts preparing for the test. Test questions are supplemented by background questionnaires for school heads, tutors, parents and/or students in 13 countries or regions, namely Belgium (French and Flemish Communities), Estonia (for tutors only), Ireland, Spain, France, Lithuania, Hungary, Austria, Romania, Finland, the United Kingdom (Scotland) and Iceland (Hargreaves, 2001). This practice most often concerns tests and examinations organized for monitoring purposes. The data collected relate to the socio-economic background of students, their motivation, support measures or the school climate (Frery, 2008). The questions cover teaching experience, professional development activities, teaching methods and other topics.

In most countries in Sub-Saharan Africa, the questions in any given national examination are similar or differ on a regular basis and are not the same for all students taking it (Vandeyar, 2005). Reasons range from a wish to take account of individual learning differences and needs to methodological considerations surrounding the analysis and evaluation of tests, or the desire to prevent cheating by students or tutors (Vandeyar, 2005). Thus, four countries vary questions to adapt their tests to individual learning levels and needs. For example, the national examinations in Nigeria, which are based on ICT, are closely adapted to the individual levels of the students taking them (Agbo, 2011). Each student at every level is therefore challenged with a personalized test. In a study conducted in Botswana, Tabulawa (2012) asserted that the optional national curriculum assessment at the age of 14 includes four different tiers for mathematics, each of which assesses a range of attainment levels.

Tutors assess which tier would be most appropriate for a child's ability. For science there are two different tiers, each of which assesses different levels. As with the mathematics tests, the tutor assesses which tier would be most appropriate for a child's ability. In Uganda, tests similarly consist of tests at different levels (A to F), which are related to defined attainment outcomes for most students at different stages of the school (Afolabi, 2010). Not only are there different tests/questions for different levels, the National Assessment Bank, from which the tutor downloads a test, contains several equivalent tests at each level, so students tested at the same level in different colleges are not necessarily answering the same questions (Afolabi, 2010). This arrangement reduces the chances of students in one school informing those in another school of the content of tests. In Kenya, not all students need to answer the same questions because of the statistical methods applied (MoE, 2020).

Similarly, school evaluation in Kenya adopts a matrix sampling method in which all tertiary institution students take a set of common questions but also further different questions. The distribution of tasks across the sample is such as to ensure statistically satisfactory coverage of an appropriate range of knowledge and skills without overloading or stressing individual students (MoE, 2020). The same applies to most tertiary institutions in Mandera County in which students receive the same set of questions. The tests are constructed so that in the same subject area they do not vary in difficulty. In Mandera County, this has not minimized cases of examination malpractice. For instance, a Ministry of Education report from (2020) indicates public tertiary institutions in Mandera have registered exam malpractice in the national examinations compared to the national grades as shown in Table 1.

Table 1: Statistics on Examination Malpractices in Mandera County

| Year | Total Number of Candidates | Number Involved in Examination Malpractices | Percentage (%) |
|-------------|-----------------------------------|--|-----------------------|
| 2015 | 181 | 31 | 17.1 |
| 2016 | 126 | 72 | 57.1 |
| 2017 | 174 | 77 | 44.3 |
| 2018 | 104 | 75 | 72 |

Source: Mandera County Education Office (2023)

Table 1 paints a picture of declining trend in the academic integrity of students in national examinations in public tertiary institutions due exam malpractice and this queries the academic integrity in managing these examinations. However, MoE (2020), as did other empirical studies, has not exhaustively indicated how examination setting practices are effective in determining students' academic integrity in examinations, hence the study.

STATEMENT OF THE PROBLEM

Examination setting is one of the major means of determining the kinds of tests students need to undertake in both general and specific areas of studies. This is possible through effective examination setting practices with much integrity. However, as stated in the background, MoE (2020) and Table 1, shows high level of malpractice this creates doubts as to the levels of management of every step of the examination process. Academic integrity is still wanting since there is evidence of malpractice in the county. As noted in Table 1, in the year 2015, Mandera County had an exam malpractice at 17.1 %, 57.1 % in 2016, 44.3 % in 2017 and 72.1 % in 2018 (MoE, 2020). This points to a declining trend in the academic integrity in national examinations in public tertiary institutions.

Despite this state of affairs, few empirical studies have interrogated the extent to which examination setting practices influence academic integrity in public tertiary institutions hence the study.

OBJECTIVES OF THE STUDY

The study sought to examine the influence of examination setting practices on academic integrity in public tertiary institutions in Mandera County.

THEORETICAL FRAMEWORK

The study was guided by the systems theory which was postulated by Luhmann Nklas (2004). This theory holds that an organization is a managed system that transforms inputs such as raw materials, people and other resources into outputs which is the goods and services that comprises its products. The rationale of using systems theory in this study is that it underscores the fact that examination management requires marshalling and organizing all the material and human resources needed for smooth examination conduct. In other words, effective examination management practices are key to academic integrity of students in tertiary institutions. The study was also guided by the Lemon Market Theory which was proposed by George Akerlof (1970). This theory holds that, in lemon markets, it is impossible to assess the quality of products and services, a situation where the seller of products or service has more information than the buyer which implies that the market will gradually decline and defunct.

The main issue here is that quality is not assessable beforehand, thus giving sellers' incentives to presents the products or service as being of higher quality than it actually is. In the application of this theory, it is impossible to assess the quality of products and services. The one selling has more information than the buyer meaning that the market will slowly decline and become obsolete. The quality of education cannot be assessed before it goes to the consumer. Dishonesty comes whereby the consumers are cheated. Students who graduate from tertiary colleges may become lemon products since their quality cannot be evaluated in the job markets. Without proper examination management practices, there will be no academic integrity hence poor quality of education in tertiary colleges.

RESEARCH METHODOLOGY

This research employed mixed methodology and the concurrent triangulation research design. The target population consisted of 1394 respondents, including three principals and 150 College Tutors, seven Examination Officers and 1234 students from which 462 respondents were sampled using Yamane's Formula. From this sample, three principals and seven

examination officers were chosen using purposive sampling. Conversely, from each college, 150 tutors were selected using purposive sampling and about 303 students were selected randomly. Through the application of this sampling procedure, the researcher successfully obtained a sample comprising three principals, seven examination officers, 150 teachers and 303 students. Qualitative data were analyzed thematically in line with the study objectives and presented in both verbatim and narrative formats. For the quantitative data, a descriptive analysis was conducted, utilizing frequencies and percentages. Inferential statistics were also done using Pearson’s Product Moment Correlation Analysis using Statistical Package for Social Sciences (SPSS Version 23) and presented in tables.

RESULTS AND DISCUSSIONS

This section presents the findings of the study based on the objective. It also outlines the methods of presentation of the study findings and discussions.

RESPONSE RATES

In this study, 150 questionnaires were distributed among college tutors, while 303 were given to students. The completed and returned questionnaires included 148 from teachers and 299 from students. Additionally, the researcher conducted interviews with three principals and seven examination officers, providing valuable insights. Table 6 displays the response rates for each participant group;

Table 2: Response Rates

| Respondents | Sampled Respondents | Those Who Participated | Achieved Return Rate (%) |
|----------------------|----------------------------|-------------------------------|---------------------------------|
| Principals | 3 | 3 | 100.0 |
| College Tutors | 150 | 148 | 98.7 |
| Examination Officers | 7 | 7 | 100.0 |
| Students | 303 | 299 | 98.7 |
| Total | 463 | 457 | 98.7 |

Source: Field Data (2024)

Table 1 shows that the response rates for each group of participants: 100.0% for principals, 98.7% for college tutors, 100.0% for Examination Officers, and 98.7% for students. The overall average response rate of 98.7% aligns with the suggested adequacy criterion of Creswell (2014), who considers a response rate above 75.0% as acceptable. The high response rates enabled the researcher to make meaningful generalizations of the study outcomes to the target population, providing confidence in the findings.

Examination Setting Practices and Students’ Academic Integrity

The study sought to examine examination setting practices adopted by public tertiary institutions and how such practices influence students’ academic integrity. Results are shown in Tables 3 and 4:

Table 3: Examination Setting Practices

| Examination Setting Practices | College Tutors | | Students | |
|--------------------------------|----------------|------|----------|------|
| | f | % | f | % |
| Appointing examination setters | 43 | 75.4 | 45 | 19.5 |
| Selection of questions | 37 | 64.9 | 43 | 18.6 |
| Examination format | 25 | 43.9 | 162 | 70.1 |
| Moderation of questions | 23 | 40.4 | 47 | 20.3 |
| Preparation of marking schemes | 45 | 78.9 | 94 | 40.7 |

Table 3 shows that majority (75.4%) of the college tutors stated that appointment of examination setters is a common practice as did majority (78.9%) who cited preparation of marking schemes. Majority (64.9%) of the college tutors mentioned selection of questions, 43.9% indicated that they adhere to examination format whereas 40.4% mentioned moderation of questions as the common examination practice. However, appointment of examination setters was not within the purview of students and thus a paltry proportion of 19.5% responded in favor as did selection (18.6%) and moderation (20.3%). Though, they indicated that a common practice, according to them, was adherence to examination format (70.1%) and probably preparation of marking schemes (40.7%). These findings affirm the fact that most tertiary institutions adopt different examination setting practices at variance which may in the long run impact on academic integrity among students.

The outcomes of this research align with a longitudinal study conducted in New Jersey by Walsh and Betz (2005). Their study proposed that the extent of time and effort invested in constructing a test is influenced by factors such as the test's significance, the proficiency of the test takers, the test format, class size, test deadlines, and the experience of the test developer. Notably, test developers, having been students themselves, possess the advantage of modifying or adopting test questions from their prior assessments, a practice that significantly facilitates the test construction process.

Table 4: Views of College Tutors and Students on the Influence of Examination Setting Practices on Academic Integrity in Public Tertiary Institutions

| Test Items | REP | Ratings | | | | |
|--|-----|---------|------|-----|------|------|
| | | SA % | A % | U % | D % | SD % |
| Principals appoint examination setters to determine performance and academic integrity in public tertiary institutions | TR | 66.6 | 9.7 | 3.9 | 12.3 | 7.5 |
| | ST | 70.1 | 12.9 | 2.3 | 10.6 | 4.1 |
| Principals and tutors select questions to enhance performance and levels of academic integrity in public tertiary institutions | TR | 64.9 | 11.5 | 1.3 | 13.7 | 8.6 |
| | ST | 59.3 | 15.3 | 4.2 | 11.8 | 9.4 |
| In public tertiary institutions, there is a designed examination format to enhance performance academic integrity among students | TR | 80.7 | 7.6 | 4.4 | 5.2 | 2.1 |
| | ST | 75.3 | 4.9 | 3.3 | 10.1 | 6.4 |
| In public tertiary institutions, examinations are moderated to improve academic integrity | TR | 70.2 | 11.8 | 1.3 | 12.7 | 4.0 |
| | ST | 65.4 | 19.3 | 5.6 | 5.3 | 4.4 |
| Tutors prepare marking schemes as a way of improving academic integrity in public tertiary institutions | TR | 82.5 | 7.8 | 1.9 | 2.3 | 5.5 |
| | ST | 71.9 | 9.1 | 2.9 | 13.6 | 2.5 |

Key: REP-Respondents; TR-College Tutors; ST-Students;

Table 4 shows that a fair majority (66.6% of college tutors and 70.1% students) of the college tutors and students strappingly concurred with the opinion that administrators appoint examination setters to determine performance and academic integrity in public tertiary institutions, 12.9% of learners and 9.7% of the tutors approved. Nevertheless, just 3.9 percent of tutors and 2.3% of learners expressed uncertainty, while 7.5% of tutors and 4.1% of the students disagreed severely. 12.3% of college tutors and 10.6 percent of students also expressed disagreement. Majority of the respondents (64.9% of college tutors; 59.3% students) strongly agreed with the view that administrators and tutors select questions to enhance performance and levels of academic integrity in public tertiary institutions. On the same breath, 11.5% of the college tutors and 15.3% of the students agreed.

However, a trivial 1.3% of the college tutors along with 4.2% of learners were unresolved, 13.7% of the college tutors and 11.8% of the students differed whereas 8.6% of the college tutors and 9.4% of the students strongly opposed. In relation to Jennings and Bush's (2006) assertions, these findings demonstrate that the inclusion of identical questions in national examinations varies across countries, as exemplified by the practices in Finland and other nations. One category of countries adheres to a standardized approach, wherein all pupils facing a specific test are presented with the same set of questions.

On the other hand, a significant number of Sub-Saharan African countries follow a more flexible approach, wherein national examination questions may differ regularly and are not uniform for all students (Vandeyar, 2005). This variability is attributed to factors such as accommodating individual learning differences and needs, methodological considerations for test analysis and evaluation, and the desire to curb cheating among students or college tutors.

Majority of the college tutors (80.7%) and students (75.3%) strongly agreed with the opinion that, in public tertiary institutions, there is a designed examination format to enhance performance academic integrity among students. In tandem, 7.6% of the college instructors and 4.9% of the students were in agreement. Nonetheless, a certain percentage of college tutors (4.4%) and students (3.3%) were undecided, while a portion of college tutors (5.2%) and students (10.1%) disagreed, and another percentage of college tutors (2.1%) and students (6.4%) strongly disagreed with the aforementioned perspectives. These findings parallel the results of a longitudinal study conducted in New Jersey, where Walsh and Betz (2005) argued that the time and effort invested in test construction depend on factors such as the test's significance, the test taker's proficiency, the test format, class size, test deadlines, and the experience of the test developer.

In this research, the study's outcomes disclosed a considerable majority of college tutors (70.2% of students) and students (65.4%) who firmly supported the notion that examinations in public tertiary institutions undergo moderation to enhance academic integrity. Moreover, 11.8% of college tutors and 19.3% of students expressed agreement with this perspective. However, a small proportion of college tutors (1.3%) and students (5.6%) remained undecided, while 12.7% of college tutors and 5.3% of students disagreed, and 4.0% of college tutors and 4.4% of students strongly disagreed. These findings align with Zoeckler's (2007) assertions regarding test banks, which may encompass up to four thousand peer-reviewed, time-tested, and moderated sample test questions. Instructors choosing to utilize such a test bank can conveniently select a fixed number of test questions from it to construct their assessments. Most (82.5% of tutors; 71.9% student) of tutors and students strongly agreed that tutors prepare marking schemes to improve academic integrity in public tertiary institutions whereas a small portion (7.8% college tutors and 9.1% of the students) supported. However, 1.9% of the TR and 2.9% of ST were undecided, 2.3% of the TR and 13.6% of the ST disagreed whereas 5.5% of tutors and 2.5% of the ST strongly opposed. This indicates that marking schemes play a crucial role in examination management cannot be overlooked.

Inferential Analysis

To verify the relationship between examination setting practices and academic integrity, data were collected on frequency of adherence (Very Often = 5, Often = 4, Sometimes = 3, rarely = 2 and Never = 1) to the examination setting practices and students’ KNEC results and results are shown in Table 5:

Table 5: Results of Frequency of Adherence to Setting Practices and Kenya National Examination Council Results

| Frequency of Adherence to Examination Setting Practices | KNEC Results (%) |
|---|------------------|
| 1 | 25 |
| 2 | 29 |
| 3 | 45 |
| 4 | 59 |
| 5 | 76 |

Table 5 shows that that in tertiary colleges where only one practice is adopted, students register paltry academic grades whereas in institutions where all the examination setting practices are adopted, students perform well and register impressive end-year examination test scores. Data in Table 5 were run through Pearson's Product Moment Correlation Test Analysis. Results are shown in Table 7:

Table 7: Relationship between Frequency of Adherence to Examination Setting Practices and KNEC Results

| | | Frequency of Adherence to Setting Practices | KNEC Results |
|---|---------------------|---|--------------|
| Frequency of Adherence to Setting Practices | Pearson Correlation | 1 | .985** |
| | Sig. (2-tailed) | | .002 |
| | N | 5 | 5 |
| KNEC Results | Pearson Correlation | .985** | 1 |
| | Sig. (2-tailed) | .002 | |
| | N | 5 | 5 |

** . Correlation is significant at the 0.01 level (2-tailed).

Table 7 shows a Pearson Product-Moment Correlation analysis which generated a correlation coefficient was 0.985, and the corresponding p-value was 0.002, which turned out to be less than the predetermined level of significance (5% or 0.05) denoted by p-value = 0.002 < 0.05. These statistically significant findings provide evidence of a significant relationship between the adoption of examination setting practices and academic integrity. Notably, these results are

consistent with the findings of a study conducted by Zoeckler (2007), which reported a p-value of $0.031 < 0.05$.

Thematic Analysis

During the interviews, most of the principals and examination officer agreed with the views expressed by the tutors and students. They stated that the appointment of examination setters and preparation of marking schemes are the most common examination practices. Principal, P1, stated;

In my college, I always ensure that there are adequate examination setters who must at the same time, prepare marking schemes for the questions.

These opinions were backed by the examination officers who also detailed that there is always a training for examination setters. They are trained on how to set questions and hence prepare marking schemes for the same questions. The interviewees further corroborated the views expressed by the tutors and students that principals and tutors help in selection of questions as per the content taught to enhance performance and levels of academic integrity in public tertiary institutions. These views further support the assertions of Vandeyar (2005) that questions in any given national examination are similar or shift frequently and may not be identical for every student taking it. Concerning examination format, the principals and examination officers echoed the sentiments expressed by the tutors and students that, in public tertiary institutions, there is a designed examination format to enhance performance academic integrity among students. Principal, P2, responded after more questioning;

In my college, we have a format of setting examinations which is a replica of the national examination format. This has made it easy for students to understand what is expected of them in any examination and thus, reduced incidences of examination malpractice.

Similar views were expressed by the examination officers who concurred with the principals. Examination Officer, EO1, noted;

All training colleges are required to develop an examination format which conforms with the national examination templates. This always follows Bloom's format of setting questions.

These views further support the findings of Walsh and Betz (2005) who noted that, when time and effort invested by a test developer in constructing a test depend on various factors such as the test's significance, the proficiency of the test takers, the test format, class size, test deadline, and the experience of the test developer. The interviewees also indicated that examinations are often moderated as per the set marking schemes to improve academic integrity.

This further corroborates that the assertions of Zoeckler (2007) that up to 4,000 peer-reviewed, time-tested, and regulated sample test questions could be found in test banks. In order to create a test, an educator who decides to use this test bank would only need to choose a predetermined amount of examination inquiries from it.

SUMMARY OF FINDINGS AND CONCLUSIONS

The study found that various examination setting practices play a vital role in promoting students' academic integrity. These include; appointment of examination setters, selection of questions, examination format design, moderation of questions and preparation of marking schemes with appointment of examination setters, designing examination format and preparation of marking schemes being the most common practices. However, from the study, many public tertiary institutions rarely adhere to examination setting practices as a strategy for improving academic integrity.

RECOMMENDATIONS

The study recommends that tertiary institutions and other education stakeholders should organize for training of college tutors in order to acquire pre-requisite skills in setting examinations. This may enable them master the practices and procedures for setting standard examinations.

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