

# **Technology in Educational Assessment: Online Examination System as a Solution to Examination Challenges and Irregularities at University Level**

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Educational assessment is a critical and sensitive component of university teaching and yet examination challenges and irregularities continue to dent credibility of Kenya's university education. The challenges and irregularities are as a result of weaknesses of the paper and pencil assessment method in use in universities. Online examination system is a technology that could be preferred to the paper and pencil method to safe guard credibility in the university education.

This paper highlights weaknesses of paper and pencil method of examination assessment and considers short and long term effects of these short comings. It then explains how features of an online examination system would alleviate the cited weaknesses. This is followed by an explanation on how the system, given its feasibility, can be implemented and adopted by local universities.

## **I. Introduction**

General observations indicate that retaining credibility in semester examinations and tests remains a complex challenge across local universities. This is due to increasing student enrolment. Statistics from the Ministry of Higher Education show that over a period of five academic years (2004 – 2009), university student population has increased by 35%. The rapid growth in enrolment rate poses even greater credibility challenges in the paper and pencil method of assessment. It is therefore important and urgent that online examination system is adopted to alleviate these problems in order to retain credibility. Credible assessments accurately inform instructors, education managers, employers and other stakeholders on abilities and competencies of the examinee. Results from credible assessments enable students to know their true potentials, compare their placements among peers, and are a better basis for career development.

## **II. Challenges and Irregularities of Paper and Pencil Method of Assessment**

The paper and pencil method of assessment currently in use in the local universities is plagued with challenges and irregularities. These challenges and irregularities include but are not limited to;

- Cheating
- Plagiarism
- Complaints of unfair grading
- Delayed results
- Missing scores
- Missing units

It is worth noting that cheating and plagiarism remain the most rampant challenges of this method of assessment.

### **III. How and Why University Students Cheat in Exams**

General observations indicate that in most cases students use four cheating methods; 'mwakenya', mobile phones, asking for or stealing answers from colleagues and plagiarism. 'mwakenya' is a cheating method in which the examinee refers to self-developed short revision notes scribbled in a miniature piece of paper for answers. Students sometimes use mobile phones to send and receive messages on answers from fellow examinees, friends and sympathizers. Plagiarism is where a student copies someone's work and submits it as their own. Plagiarism is most prevalent in research projects and term papers.

Students across local universities give a range of reasons as to why they cheat in exams. However they seemingly agree to the following reasons: Fears for failure make students cheat to avoid re-sits. Some students rarely attend classes and end up unprepared and less confident to sit exams. Some students agree that they take tests lightly and end up unprepared hence the need to cheat. While some are lazy to read for exams, others perceive that the exams are difficult.

Students find it easy to cheat without being caught because of inadequate supervision and invigilation due to few supervisors and invigilators. Cheating also occurs due to crowded exam rooms as this leads to close-sitting arrangements. This gives examinees opportunity to ask for assistance from their neighbours. Some students have perfected the art of cheating in paper and pencil method because they started doing it right from primary level hence skilled and experienced. Students plagiarise because most instructors do not detect materials copied from internet or elsewhere.

### **IV. Short and Long Term Effects of Cheating**

Exam cheating is not without short and long term consequences. University students articulate the consequences of exam cheating. In the short term, students who persistently cheat in exams end up unable to understand and retain the content taught. As a result these students fail to adequately build on the knowledge taught in the course. When this happens students miss opportunities to discover their true potentials for career development, improvement and personal growth. Cheating also encourages laziness and discourages originality. The vice robs students of innovativeness and creativity leading to production of impractical graduates.

The long term consequences of cheating in examinations are felt mostly in the career field. Students note that many of those who cheat stagnate early in their careers due to intellectual inadequacy in the areas such as reasoning and problem solving. In addition those who plagiarise lack basic writing skills vital in the world of work. In most cases employers would have to spend resources to develop these graduates into competent employees.

## **V. Online Examination System as a Solution**

Online examination system is a suitable technology that can be used to solve the challenges of paper and pencil method of educational assessment at the university level. The system has features that would alleviate the weaknesses of the paper and pencil method. For example, the system uses question banks that allow random display of single queries thus reducing chances of using 'mwakenya' or asking for answers among examinees. To encourage students to revise, instructors can use the system to avail revision questions. The examination databases are highly secured and with restricted access to ensure confidentiality and accountability. The system provides an audit trail of persons who access the databases and thus reduces the risk of leakage. Furthermore results are stored in a database and a student can access full record of units taken and grades obtained. Most important, the system automatically grades the exams and this ensures fair grading and immediate result feedbacks. To encourage students to write original research projects and term papers instructors can use anti-plagiarism software in grading assignments. In this regard the online examination system ensures that students' grades are merited. Merit-based results would restore and safe guard the credibility of university education.

There are other benefits to be realized by using online examinations systems. For example, timely availability of examinations data. The data will allow examiners to pay attention to and improve on quality of questions, reliability, validity and testing for knowledge retention and skills acquisition. In addition, the technology allows use of multimedia and interactive designs. This means that instructors can create scenarios that test for a wide range of skills including application of concepts, analysis, evaluation, and high cognitive abilities such as reasoning.

## **VI. Support for Online Examinations system**

A cross-section of university students expresses overwhelming support for online examination system. These students feel that the system has additional benefits compared to paper and pencil method. Besides improving merit, online examination system provides students with opportunities to improve on their computer skills and thus enabling them to prepare adequately for the highly technological market as it will increase confidence in handling computers. The system also serves to promote fair competition and improves quality of professionalism as exams become more credible. Students using this technology also develop into better planners and time keepers. Additionally the system can allow an examinee to take examination from anywhere in case of emergencies.

However, there are minor concerns by students and instructors. Some students have raised concerns over the suitability of the system in handling practical exams. Questions have also been raised concerning the possible complications and new experience that may come with online examination system. Instructors have raised the issue of using the system to examine students on long essays and skills testing. On interrogating these concerns, it has emerged that those students who have poor computer skills perceive online examinations as not suitable. Regarding essays, the system allows for lengthy essays that are graded against a sample or template provided by the instructor. In terms of skills testing, technology provides opportunities such as multimedia and interactive and even video clips to be part of the

content for the questions. Therefore the requirement is for instructors to use available softwares to design high quality questions that test desirable features.

Generally majority of administrators and instructors, from the local universities, seem resistant to computer technology and therefore reluctant to embrace online examination system. Appraising online examination system in the universities requires education managers with high levels of motivation and strong orientation towards technology. To increase the adoption rate of the technology, the university should first create awareness on the benefits offered by online examination system. Further, the education managers should highlight how the technology enables the institution to get a competitive advantage by effectively dealing with shortcomings of paper and pencil method of assessment.

## **VII. Implementation of Online Examinations System at Universities**

For a university to implement online examination system it requires resources such as computers, software, network and internet. These resources are readily available and within reach in several campuses. In addition trained staff is required. The role of the staff is to sensitize, train and support students and instructors on the system. For effective orientation staff, instructors and students should have open and constant communication on performance. To allay fears over disinvestments, online examination system should be piloted with a small class of say 50 to 100 students.

Kenya Civil Aviation Authority (KCAA) has successfully implemented an online examination system to administer exams. With only 30 computers, a file server, commercial software and few trained staff, KCAA is able to administer 15 different types of exams to an average of 500 examinees every 20 days.

## **VIII. Call for Acceptance**

Agreeably, online examinations system is preferable to paper and pencil method. The author, therefore, calls upon, stake holders to support implementation of the system at the university level to safe guard credibility in Kenya's university education.

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