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## RESEARCH ARTICLE

### “Redesigning Examination System through technology”

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#### Abstract

The focus of this paper is to investigate the importance of the new technologies in the conduct of examinations. e-examinations which are conducted and delivered with the use of electronic devices such as the computers, Internet, mobile phones, or other technologies are becoming globally acceptable for assessments. Technology is derived from Latin word which means materials, tools and a process for solving practical problems. The use of technology has made every aspect of education modern, reliable, global and efficient. The features of technology are more prominent in the conduct of e-examinations world-wide. Institutions that are experimenting with e-examinations are truly being proactive in using a scientific approach to solving the problems experienced in the conventional examinations.

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#### Introduction

Technology can be described as a product in the sense that it is the end result of the systematic application of scientific knowledge in addressing human learning problem which include problems related to examination. The concept “new technology” is an indication that technology is not stagnant, but keeps bringing new ideas, knowledge, inventions and skills that should be applied. This is the explanation for the fact that developed countries are always developing and improving the ideas. The new technologies have given birth to the current usage of the new technology based examinations powered by the computers and other Information Technology (IT) products including electronic gadgets, microcomputers, mainframes, the Internet and mobile phones, etc. E-Examination is an end-to-end electronic assessment processes in which the Information and Communication Technology (ICT) is used for the presentation of the assessment activities and the recording of responses from the various students. This includes the end-to-end assessment process from the perspective of tutors, learners, learning establishments, awarding and regulating bodies, and the general public.

Technology can further be described as a process because it involves various series of actions that could lead in achieving a successful conduct of E-examinations. This includes functions connected with the management, organizations of human and non-human resources for the overall conduct of e-examinations

The e-examination is a welcome innovation because the conventional examination is plagued with several pitfalls such as examination leakages, impersonations, inadequate supervisors, demand for gratification by markers so that results can be influenced, bribe taking by supervisors or invigilators, and the most devastating of these is the delay and/or in many cases, non-release or delay of examination results especially where there are large classes or public examinations.

The adoption of e-examination has more radical implications and challenges than mere changing the mode of examination. It can affect the entire structure of the education and probably change its patterns of work for staff and students.

Education has always been conceived as a tool to promote national development as well as international understanding. Education is a key factor determining a nation's progress. The quality of knowledge society depends on the quality of education. In the whole educational system, Evaluation plays an important role in the process of teaching and learning. Examination is an instrument to test what the student has learned and retained in his mind during course of study. Examination are integrated part of our educational system. With the technological revolution, the electric media is replaced by the digital media or ICT and virtually every aspect of human behavior or activity is in some way or another dependent on the new computer technologies. It is a fact that, ICT has great potential for knowledge dissemination, effective learning and the development of more efficient education services. ICT has opened new avenues in education by way of increased accessibility of resources and better interaction processes. In the case of Examination system, all the universities and school education boards are under a process of change from manual to computer technologies / ICT. This change in the examination system will minimize human intervention by adopting ICT since the technology promises compact storage, speedy retrieval of data and untiring diligent work. Global reforms in education and challenging ICT demands have also made a remarkable shift in the structure of ICT environment and the utilization of ICT in education. ICT is having lot of possibilities in improving the whole examination system. Trend of seeking online applications for regular, entrance /competitive examinations and conducting on-line examinations have made the system very simple and cost effective for the examining bodies. But, on the other hand, this change is also bringing lot of challenges to the rural youth of the country who are not that much technological. The present paper, focus on the possibilities and challenges of integrating ICT in examination system. The paper also focuses on the problems related with the ICT based examination system adoption by the students.

### **Pros & Cons of E-Examination and Paper based Examination**

**Security of Examination Paper:** It is not possible to set different exam paper for different student and there are chances of leakage of exam paper while passing it to different examination centers in case of paper based exam but Online exam provides flexibility and security for question paper as each student can get random questions of same exam pattern.

**Result Processing:** In case of paper based exam overheads associated with verification of answers and result processing are huge and prone to errors whereas Online Examination Results are instant and accurate.

**Examination Center:** In case of traditional exam, management of examination includes classroom infrastructure, question paper, answer sheets whereas in Online Exam can be conducted where candidate can appear for it from remote examination centers with web camera surveillance technique. So hundreds or thousands of students can appear for it from various locations.

**Logistic:** Logistic cost is high in case of Paper Based Exam whereas minimal cost is low in case of online examinations

**Subjective Questions:** Online Exam can have limitations for subjective exams like drawing, diagrams whereas no such limitations for paper based exam.

**Per Examination Cost:** Due to flexibility of online examination cost per candidate can be around Rs. 50 to Rs. 150 including examination center cost whereas Paper based exam would cost more than Rs 300 to Rs. 400 per candidate.

**Supervisor:** Online Exam can be managed in auto surveillance mode where web camera connected to the system would take snapshot of the student appearing for the exam. This would ensure that same student is appearing for the exam and system is able to keep track on student during exam whereas in case of paper based examination, for each designated set of students supervisor is required.

### **Phases of Examination Process**

The complete examination process comprises the preparation phase of the examination including

Step 1: General examination planning

Step 2: Recording of course and examination data

Step 3: Carrying out time and room planning.

**Enrolment and admission for the examination include:**

Step 4: Student enrolment for examinations

Step 5: Generation of registers for the exam registration

Step 6: Verification of prerequisites for admission to examination.

The core part of the examination process chain is the examination itself

**Processing the examination results comprises:**

Step 8: Assessment and recording of the examination results

Step 9: Storage of data in the database.

Step 10: Automated generation of mark information

Step 11: Supplying additional information for examinees through administrators

Step 12: Creating reports, lists and certificates.

**Finally, there are several permanent tasks such as**

Step 13: Coordinating examination tasks between the examination office and the lecturers

Step 14: Maintenance of relevant software systems.

## **Benefits and challenges**

Today the development of electronic assessment tools and the use of electronic examinations have left behind their initial stage. Admittedly, many critical challenges had to be met on the way: the tremendous efforts that were necessary for the development of electronic exams or for the initial creation of a pool of questions through the lecturers, the insufficient familiarity of users with the new procedures, malfunctioning hardware components or operating systems or a failure in Internet access, legal security requirements that had to be met, insufficient flexibility of examination regulations or attempts at manipulation and fraud. Therefore, the development of a methodologically sound and juridical stable electronic exam scenario demanded overcoming many barriers. Meanwhile a consolidation with regard to electronic examinations has been accomplished in many although not in all respects.

### **Obstacles related to the transfer of Examination Scenario**

Some of the potential obstacles related to the transfer of examination procedures from a paper based scenario into a computer-based environment are as follows:

**Organization of on-screen examination setting :** Planning of simultaneous and of delayed exams, room planning with regard to PC pools and the number of available PC workstations, instruction of staff, establishing test centers, etc.

**Conceptual design and methodology of exams:** Design of examinations and planning of the exam process (generation of test item pools, designing exams along available question types, securing consistent levels of difficulty, etc.), computer-based preparation of the examination (conception and carrying out of practice exams and tests for the purpose of exercising, etc.)

**Examination technology and tools:** guaranteeing an interference-free and fraud-protected examination process, considering test tool-based intolerance against orthographic or other minor mistakes in the automatic exam correction process, etc.

**Judicial requirements:** setting up reliable authorization procedures, guaranteeing verifiability of results, adding the new exam forms to formal curriculum and exams regulations, etc.

Electronic examinations lead to significant changes in almost all aspects of the organization of examinations. Benefits and downsides will be reconsidered and weighed out against each other on the basis of the four dimensions of the electronic examination process depicted above.

A main reason for adopting electronic examinations is the possibility to process a significantly larger amount of examinations; this possibility is of paramount importance for teachers and administrators. Examiners expect a reduction of workload regarding the preparation of exams and the correction process as well as considering administrative tasks such as the digital collection and announcement of examination results.

Furthermore, potential sources of error are reduced:

Problems with the legibility of handwritten exam answers do not apply in the context of digital data processing. Even the administrative processing of exam results is facilitated since media breaks are avoided within a comprehensive electronic environment. Although only a fraction of exam questions is suited for an automatic correction (i.e. multiple choice, long menu etc.), and although some questions require manual (post-)correction through the examiner, the facilitation of exam corrections generally saves time and increases the correction quality even of complex questions through computer-based pre-correction procedures.

From the students' viewpoint, there are even more benefits of electronic examinations such as new forms of self-contained knowledge diagnostics represented by digital practice exams (for the purpose of exercising) and periodic course-accompanying electronic tests. Self-contained knowledge diagnostics can also be fostered through supplying exemplary solutions to students' incorrect exam answers. Moreover, the (partial) automatic correction of tests leads to an increase in objectivity of examination marks. Additionally, the notification on results immediately after the end of the exam is highly welcome among students as an effective means of feedback.

## Conclusion

Examination is an instrument which can be used to test what the student has learned and retained in his mind during the course of study. Examination are integrated part of our educational system. With the technological revolution, the electric media is now replaced by digital media or ICT and virtually every aspect and activity of human behavior is in some way or another connected on the recent technologies of computer. New scopes in education are opened by ICT which has increased the accessibility of resources and better interaction processes. In the case of the Examination system, all the universities and school education boards are undergoing a process of change from paper based to computer technologies / ICT. This change in the examination system will help in minimizing human intervention by adoption of ICT since the technology is promising the compact storage along with speedy retrieval of data and diligent work. Hence redesigning examination system with ICT is very useful to achieve transparency, reliability and efficiency in the existing system.

## References

1. Mishra, N. L. (1988). Organization and Management of University Examinations, Jaipur:National Publishing House
2. Anurag-Sankhian (June 2013) Resdesigning-Indian-Examination-System-through-Technology : GIAN JYOTI E-JOURNAL
3. Bieniecki W., Stańdo J., Stoliński S.: Analiza wymagań dla systemu elektronicznego oceniania rozwiązań zadań egzaminacyjnych. Automatyka 2009, pp. 1397-1406
4. Bhardwaj, Mohini & Singh, A. (2008). E-Governance: Single Portal for Integrated ExaminationSystem, Emerging Technology in E-Government, G.P. Sahu, pp.288-293
5. Federal Ministry of Education (2004). Ministerial initiative on e- examination for Nigerian education system. e-Education Project.