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DIGITALIZATION OF EXAMINATION MANAGEMENT FOR SUSTAINABLE EDUCATIONAL SYSTEM IN NIGERIA

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Abstract
This study examined Digitalization of examination management in educational system. It became necessary to embark on it following the frequent rate of examination malpractices in the Nigerian educational system and the impact of ICT across the sector. This therefore informs the need for a new strategy using technology to arrest this emergent occurring phenomenon as a better option of reducing the collapsed in the system. Consequently, one major way of re-inventing standards and old culture of quality assurance needed to produce the relevant and quality manpower for Political and economic development through innovation digitalization. This can be done through the deployment of Information Communication Technology as a processing tool in managing examination in Nigeria's educational institutions. The paper looked at the concept of ICT and Digitalization, the meaning of examination management, computer base-examination and the challenges of computer base examination. The paper concluded that for sustainable educational development, current state of examination management in tertiary institutions in Nigeria can be enhanced by the incorporation of ICT in examination management. The study recommended among others that involvement and support from Government at all levels in the incorporation of ICT in examination management through the provision of adequate funding, logistics provision of quality ICT facilities such as; computers, power supply, software, training and retraining of staff and students in the utilization of computers hardware/software packages etc.
Keywords: Digitalization; ICT, Education and Examination

Introduction

Education has been described as a process through which the young acquires knowledge and realizes her potentialities and uses them for self-actualization (Offorma, 2009). Education remains the very bedrock of individual and social development in all ages and climes. As a concept, it equates the generation and dissemination of information in an orderly, systematic pattern, seeking to pass on critical values and ideas from generation to generation. Its centrality to human life and living informs the description of the current historical epoch as a knowledge-economy, indicating that the totality of a people's lives and that of nations today is predicated upon knowledge. Lenap and Kazi (2003) describe education as the oldest discipline in human history, which deals with the art of imparting and acquiring knowledge through teaching and learning at school. Similarly, Gofwen (2004) views education as the imparting of knowledge through instruction to effect discipline and maturity of the mind. It is also described as a weapon for acquiring skills, knowledge and competence for survival in a changing world (Adepoju & Fabiyi as cited in Ekpo & Is'haq, 2011). On the other hand, Olarinoye (2009) defined education as the identification, development and use of human potentials or power.

Arising from the various definitions above, the main objective of education is knowledge acquisition and realization of potentials. Arguably, the most effective method to assess and evaluate the attainment of this educational objective is by means of examination. Therefore, the proper conduct of examination is a critical factor in the realization of educational objectives in any society. Failure to properly conduct examinations portends doom for the future of the citizenry of the society. This is because when examinations are not properly conducted, the educational objectives may not be achieved. Consequently, such evaluation leads to wrong judgments and decisions which negatively affect learners, teachers, education industry and the society in general. This paper is an effort to discuss how education can be effective through digitalization of Examination, since the true test of knowledge is by examining the learner through examination, which is a test to show the knowledge and ability of a student.

Concept of Digitalization and ICT

Digitalization is defined as "application of any digital technologies to any human activities, such as personal life, social, economic, and political activities" (Gbadegeshin, 2019). Digitalization is the use of technological innovations in the business context with a significant influence on products, services, business processes, sales channels, and supply channels. The associated potential benefits include, among others, increased sales or productivity,

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innovations in value creation, and new forms of customer interaction (Urbach & Ahlemann, 2019). Additionally, it is needed to understand the aspect of digitalization in the context of the workplace i.e. the digital environment that the work takes place. It is suggested that the digitalized work environment is affecting the way people in organizations are collaborating and engaging with each other and with other stakeholders (De Bruyne & Gerritse, 2018).

The digitalization in this context is best described by a digital business consultancy i-scoop (n.d.). They say that digitalization in the workplace means that the workforce works differently, using digital tools such as the mobile devices and technologies that make them mobile and/or using social collaboration and unified communication platforms, which are digital systems, enabling them to work in a more "digital way". This, in turn, creates new opportunities to engage differently. In this study, we need to take into consideration both aspects, digitalization in the organizational context and digitalization in the context of the workplace. Thus, in our study, we defined digitalization as: The use of digital technologies that have implications for everything from business operations (research and development, production, sales, and distribution), to how the organization is communicating with their stakeholders including customers and how people within the organization are engaging in the activities that keep the business going. Digitalization is transforming the world in almost every aspect of life including the educational sector. The access to internet, increase of people using mobile phones, social media and other ICT services changed the way people interact, communicate, learn and work in almost every country (Laura Schelenz 2018); (Parviainen, et al. 2017).

Information and Communications Technology (ICT) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning (Tech-Target, 2017). According to Tech-Terms (2010), Information and Communication Technologies refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication media. In the light of the above, Kundishora (nd), observed that ICTs are exerting considerable pressure on the orthodox structures of the educational systems in several African countries. He argued that pragmatic, practical, innovative educational systems must be constantly developed and reviewed to address Nigeria's needs today and in the future in line with technological developments in the ICT sector. In support of this, Aiyepeku, Iwayemi and Ajiferuke (1994), advanced three major reasons for rapid introduction of ICT in Sub-Sahara Africa: (i) the revolution in ICT has resulted in computer hardware becoming cheaper and, therefore, more widely available; (ii) the substantial, value added, and wide recognition of the utility of ICT in the provision of and access to information services for improved planning and organizational management; and (iii) the international development agencies and donor countries have exerted significant pressure upon many governments, institutions of higher learning and other recipients of their aid, covertly and overtly, in developing countries to adapt the extensive use of ICT to improve their workforce performance and organizational management.

Thus, for a general education reform, the World Bank (2002) recommended that there should be electronic networking involving e-mail communication capacities for teaching, learning, research, management and performance monitoring of systems. According to Mason (2016) ICTs are the right tools at the right time. They are essential tools for economic development and material wellbeing in our age as they condition power, knowledge and creativity. For Hawkridge (1983), it is a revolution which has penetrated almost all fields of human activities, thus, transforming economic and social life. The rapid growth and ever-increasing importance of ICT was also observed by Zhang and Chulkov (2011). It is hard to imagine an organization operating successfully in the 21st century without a strong ICT infrastructure. They saw it as a dynamic and strategic asset of an organization for the successful achievement of its mission and goals. ICT is essential to managing transactions, information and knowledge necessary to achieve and sustain an organization's mandate and goals. In that vein, Mubashrah, Tariq and Shami (2012) explained that computer and related technologies provide powerful tools to meet the new challenges of designing and implementing assessments methods that go beyond the conventional practices and facilitate a broader repertoire of cognitive skills and knowledge.

Thus, the Federal Republic of Nigeria (2012) recognized the importance of information and knowledge economy. It believes that surviving in the information age depends on access to national and global information networks.

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The government harped on the imperative of ICTs as the bedrock for the survival and development of any nation in a rapidly changing global environment.

Meaning of Examination Management

Examination management is an important aspect of the educational process. The significance of the processes, as well as their ultimate goal, make them extremely important in Nigeria's educational issues. This is because the way the threat is dealt with has an impact on the graduates' integrity, the value of the institution's certificate, and educational growth in general. Examination, according to Xu, Guo, and Zhou (2013), emphasized that examination management is an important daily activity of the institution's management, and that its quality and level have been an important indication to gauge the level of school education since examination is an effective means of measuring and assessing students' ability and levels. In view of the foregoing, MindLogic (n.d), rightly observed that the two major problems that face every institution with regards to examination management are ensuring the conduct of full proof examinations and providing tamper proof certificates. Therefore, examination management automation system is one of the effective solutions that can prove as one of the solutions for such a problem.

Managing examination at tertiary institutions in Nigeria using the traditional methods has continued to pose serious challenges to all stakeholders in the education sector. Examination management consists of three (3) phases: Pre-Examination, Examination and Post-Examination which are done manually comprising registration of courses by students; generation of students data, administration of continuous assessment and recording of the scores, printing of answer booklets, allocation of available spaces (halls), setting and arrangements of the halls, screening and checking in of students into halls, invigilation, collection of attendance list and answer booklets, marking of scripts, recording of scores, release of results, transmitting of results to Examination and Records department, etc.

Computer-Based Examination through ICT

Information and communication technology in education. Olatoye (2011), observed has been continuously linked to higher efficiency, higher productivity and higher educational outcomes, including quality of cognitive, creative, and innovative thinking. The inclusion of ICTs in education is required to re-consider and re-think, modify or change the traditional examination methods. Olawale and Shafi'i (2010) have pointed out that the present ICT means of examining students in Nigeria is the use of electronic systems in place of manual or paper method which was characterized by massive examination leakages, impersonations, demand for gratification by teachers, bribe-taking by supervisors and invigilators of examinations, etc. Electronic examination (E-examination) according to Yu cited in Sadiq and Onianwa (2011), can be used to assess cognitive and practical abilities. Cognitive abilities are assessed using e-testing software, while practical abilities are assessed using e-portfolios or simulation software. Therefore, Davey (2011), aptly noted that wide assortments of options are now available for using a computer to present information, facilitate interaction, and collect responses in ways not possible with traditional text-based items.

Thus, Olumorin, Fakomogbon, Fasasi, Olawole, and Olafare (2013) aptly observed that technology has significantly reshaped the method of evaluating students. Computer-based examinations can be used to promote more effective learning by testing a range of skills, knowledge and understanding. In many educational sectors, educational evaluation has moved towards the use of Computer-Based Testing (CBT), which is known as tests or assessments that are administered by use of computer through technological devices linked to the intranet and, in certain cases, the internet. It is becoming commonplace to see institutions across the educational strata adopt computer-based tests (CBT) and assessment to admit or screen students for entrance into Nigerian institutions (Sadiq and Onianwa, 2011).

Challenges of Computer Based Examination

Challenges militating against adoption of CBT in Examinations include the following:
Insufficient ICTs infrastructure including hardware and software (Obioma et al, 2013);
Inadequate power supply;
Difficulties in Administering Practical/Technically oriented Courses;
Integrity of examination managers, teachers and ICT invigilators;
Acceptability (Dreher et al, as cited in Obioma et al, 2013);
High cost of system maintenance; and
Insecurity of ICTs infrastructure.

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Conclusion

This study has examined the digitization of examination management in Nigeria, the educational institutions saddled with the mandate of producing manpower as well as professionals in various professions. It became imperative for the innovative modern technology to be adopted to fulfill this mandate. Consequently, the ICT in examination management is the current trend. The introduction of ICT in the management of examination in Nigerian's educational system is believed to reduce various frauds associated with examination conduct, quality of students and disposition of students to be committed to their studies. It is believed that with the proper deployment of ICT, what goes out of the system will be in tandem with the provision of National Education Policy, which will in the long run be in the interest of economic and technological development of Nigeria.

Suggestions

The following recommendations are made;

6. Federal and States Ministries of Education in collaboration with Federal Ministry of Science and Technology should ensure that all tertiary institutions in Nigeria resort to the ICT mode of examination management in Nigeria.
7. Federal and State Ministries of Education should ensure that section 152 (c) of the 6th Edition of the National Policy of Education is religiously implemented. According to the Policy, all levels of education in Nigeria shall be encouraged to migrate to CBT in examination assessment.
8. Federal Government should improve funding/budgetary allocation of all tertiary institutions in Nigeria to improve Quality Assurance.

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