Stakeholders' Perception of the Strategies of Implementing Computer-based Examination in Business Education Programmes in North-central, Nigeria

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Abstract

*This paper examines stakeholder perception of the strategies of implementing computer-based assessment in Business Education Programmmes in North Central. The objective of this paper was to assess **s**trategies for implementing computer based examinations in Business Education programmmes in some College of Education. Questionnaire was used for the collection of data while frequency count and percentage was used to analyze the demographic data of the respondents, mean and standard deviation were used to analyze the data collected to answer the research questions, One-way ANOVA was used for the research hypotheses in order to investigate the occurrence of variations and different levels of measurable effect that exist among the variables. The findings show that stakeholders have positive perceptions of the strategies for implementing Computer-based Examinations in Business Education programmes in Colleges of Education. Recommendations are to provide adequate training and professional development opportunities for educators to ensure students are equipped with the necessary skills and knowledge to implement computer-based examinations effectively. This will mitigate challenges and enhance the overall success of the implementation process*

Keywords: Stakeholder, Perception, Strategies, Computer-based Assessment, Business Education

Introduction

Computer Based Examinations (CBE) have become an urgent matter as its implementation faces various challenges in North Central Nigeria. Teaching and learning are constantly being migrated to several ubiquitous platforms. The World Wide Web has therefore become an indispensable tool in the administration of pedagogy. This development has led to accelerated availability of educational resources and the promotion of collaboration across different research and educational institutions. A significant component of this innovative trend is the

adoption of web-based technology driven assessment of students. It is becoming common to see institutions across the educational strata adopt computer-based examinations (CBE) and assessment to admit or screen students for entrance into Nigerian institutions. Computer-Based Examination requires a system of interconnected computer networks that helps lecturers to transfer assessment questions electronically with the aid of computers. Computer systems which are used for Computer Based Examinations represents a modern way of answering examination questions, replacing the written pen and paper (PNP) format. Computer-Based Examination is a combination of networks, hardware and software, as well as means of communication, collaboration and engagement that enables the processing, management and exchange of data, information and knowledge. Computer-Based Examinations is the form of assessment in which the computer is an integral part of question papers' delivery, response storage, marking of response or reporting of results from a test or exercise (Daramola, 2017).

Computer-Based Examinations has many advantages, and has therefore been considered as useful in evaluation of education all over the world. The interest in developing and using Computer Based Examinations for assessment in schools and educational institutions has heightened in recent years. The benefits ranged from the automation of marking and subsequent reduction in marking workload to opportunities of providing students with immediate feedback on their performance. The use of Computer-Based Examination is an attempt to overcome some limitations, make course and assessments more interesting and useful processes for both lecturers and students (Hurley, 2017).

Similarly, Nwoke, et al (2017) and Ojerinde (2015) insisted that the introduction of CBE was to promote international best practices in the conduct of examination. This indicates that the use of CBE best helps to align the nation with the rest of the world in education assessment. Nevertheless, as against the weaknesses of PPT in the conduct of examinations in Nigeria, CBE has a lot of benefits with regard to the assessment of learning. Ajinaja (2017) et al. stated that CBE permits efficiency in result accuracy and computation. Also, Sanniet al (2015) added that the benefit of CBE in the conduct of examination goes beyond accuracy in result computation impacting on economy. Thus, according to researchers, CBE ensure low administrative cost and saves time. In addition, Onyibe et al (2015) stated that the use of CBE helps to ensure impartial assessment, ensures efficiency in data storage, gives immediate feed-back to the examinee and improves result reliability. Similarly, Kuyoro et al (2016) maintained that CBE ensure easy result tabulation.

Thur low et al (2010) claimed that CBE in education assessment stand unique in its ability to appeal to the need of all students including students with physical disabilities. According to them, CBE allows for easier change of test in a situation of mistake, proper storage of data for latter retrieval, increased result authenticity and it could be more accessible to the physically challenged students than Paper Pencil Test (PPT) and it allows for a more universally designed assessment environment.

Nwoke, et al (2017) and Bala (2018) concluded that the benefits of CBE in Business Education and its unique role in checkmating examination malpractices among business education students in higher institutions. The reasons for introducing CBE into the semester examinations were to help equip the students for global competitiveness in line with international best practices, help maintain visibility of the university in the international scene, reduce workload of general studies staff and eliminate all forms of examination related problems (missing script and result, wrong grade and gratification for marks) and to improve the integrity of results. Thus, the adoption of CBE into the assessment of learning is an accepted development.

Hitherto, several studies have shown that the use of CBE in conducting examination has a lot of challenges that question its desirability for use. For instance, lack of access to internet facilities, activities of hackers, technical difficulties; computer illiteracy among students and poor education funding in Nigeria have continued to be stumbling blocks towards the effective utilization of CBE in the assessment of learning (Sanni& Mohammad, 2015).Conversely, knowledge cannot be ascertained through continue assessment and CBE without a broader view on how it is implemented in Business Education programme. Business Education programme exists as one of the functional areas that are provided by vocational and technical education in Nigeria. Vividly, Business Education programmeen compasses teaching the skills, attitudes and knowledge necessary for equipping students. Business Education programme enable students to be equipped with the necessary features for an all-time learning, beyond securing employment, to contribute as human resources in national development, as educators and researchers. Business education is considered to be one of the crucial vehicles for social equity as well as sustainable development if it is accorded proper status by the government and other stakeholders. Business education is an indispensable tool in achieving development and its sustainability. Edokpolor and Egbri (2017) postulated that the real goals of Business Education had been to prepare students for specific careers in office occupations, equip them with requisite skills for job creation and entrepreneurship and expose them to knowledge about business incorporation with Information and Communication Technology (ICT).

However, Business Education programmeis disliked by both students and guardians (Oladunjoye, 2016). It is regarded as a programme designed for those that possess low academic performance. This made guardians and privileged people to

shun this type of programme, as they wrongly believe that it is meant for the low grade students. The low status associated with Business Education has made guardians to have less preference towards teaching (Oladunjoye, 2016). Students request for other types of education and only choose Business Education as a last resort. Most guardians prefer their children to study more prestigious courses like a Medicine, Engineering and Law (Federal Ministry of Education, 2005). Students are further discouraged by the low quality of Business Education programmes, attributed to a number of factors, such as the inadequate provision of financial, human, and material resources. Today, Business Education no longer commands prestige in Nigeria. Rather it is generally regarded as a blue-collar programme often reserved for dropouts or people with low intelligent quotient (Nwoachokor, 2002).Some modern philosophers in education and training, however, conceive of Business Education as a major contributor to human resources, entrepreneurial and national development. It is against this backdrop that the researcher seeks to examine the strategies, benefits and challenges of implementing continuous assessment and Computer-Based Examinations (CBE) in Business Education programmes in Colleges of Education, in North Central Nigeria.

Statement of the Problem

It is generally believed that computer-based examination (CBE) has enormous benefits in terms of short time assessment, cost effectiveness and large records storage. Examinations cannot adequately measure all that a student has learned after many years of study, which is the justification for adopting lecturer-based classroom evaluation scores as a component for fostering learning and increasing performance in higher education institutions, among others, in Nigeria. However, the consequence has been an insufficient implementation of continuous assessment in terms of frequency and forms throughout all tertiary institutions in the country. The Federal Ministry of Education (2005) claims that the quality of graduates being generated by the country's tertiary institutions is in doubt due to deterioration in the after-school performance of students enrolled in Business Education programmes

According to Iqbal (2017),and Korode (2018), however, with the widespread adoption of CBE among students in Business Education programmes, several criticisms are received from lecturers and students on the challenges encountered in the assessment process, particularly from the student when it was initially introduced primarily due to their anxiety in using a computer for an exam. Although students' lack of computer literacy is to blame for this fear, as stakeholders have accepted the computer-based examination (CBE) system as the standard for examinations in higher education since they have continued to profit from it.

Even at that, as personally observed by the researchers, students continually lament on the challenges they face during the computer based examination (CBE).

Sometime, students might be unfortunate to use a computer that is not working perfectly with keyboard malfunctioning, slow performances, bad screen, among others. This builds anxiety in students resulting in poor performances. Despite the level of accuracy involved in the processing of students' assessment, delays and errors are found which are not easy to correct. Some students end up retaking the assessment (test and examination) due to the rigid process involved. A situation whereby a structural strategy is in place to resolve essential issues encountered by students, and computer based examination (CBE) would be a great relief for students. Looking at some instances where students click on the submit button mistakenly, there is no chance of reversing to the previous page. This shows that there is need for providing a confirmation message to students to curb such occurrence. Any victim of such actions has failed to be properly assessed resulting to a poor performance.

Purpose of the Study

The main purpose of this study was to assess stakeholder perception of the strategies for implementing computer based examinations in Business Education programmes in selected college of education.

Hypothesis of the Study

$\mathbf{H_{01}}$ There is no significant difference in the mean ratings of respondents on stakeholder perception of the strategies of implementing computer based examination in Business Education programme in Colleges of Education

Concept of Computer Based Examination (CBE)

Computer-based examination (CBE) represents a modern way of answering an examination questions, replacing the written pen and paper (PNP) format. CBE is a combination of networks, hardware and software as well as means of communication, collaboration and engagement that enables the processing, management and exchange of data, information and knowledge. It can be understood to be a complex of artificial techniques and knowledge for solving instructor's problem involving marking pen and examination (Gazi, 2019).

Computer based examination requires a system of interconnected computer networks that the Standard Internet Protocol Suite (SIPS) employs to serve the users. Computer based examination (CBE) is a form of assessment in which the computer is an integral part of question papers' delivery, response storage, marking of response or reporting of results from a test or exercise. Computer Based Examination (CBE) is not just an alternative method for delivering examinations; it represents an important qualitative shift away from traditional methods such as paper-based tests. Despite these advantages available in computerized test administration as it was shown, it does not mean that CBEs are intrinsically better than paper-and-pencil tests. Previous studies by Ademiluyiet al, (2020) have even found that testing format does not affect test scores and as such CBE can be considered a valid and acceptable

testing mode. As CBE began to be used for summative assessment, to establish whether computer based examination performance was comparable to that of paper-based assessment became important. It is required to think, re-consider, and modify or change the traditional test manners. Electronic assessment tools had reduced the load of lecturers and facilitate examinations execution purposefully because of inclusion of ICTs in education. CBEs can be applied to promote further efficient learning by examining students' knowledge and understanding in many fields. Students' prior experience in computer and communication skills essential matters in CBEs. CBE is a method that may not suit the learning styles of many students. The primary factor in determining whether an assessment programmes is beneficial or not depends on whether the assessment tasks are relevant to the purposes and learning outcomes for the course, not forgetting the attitudes and skills that are to be examined. Computer and related technologies provide a powerful tool to encounter the challenges of designing and implementing assessments modes that go beyond the conventional practices and facilitate accessing wide sources of information, cognitive skills and knowledge. CBEs are written to test specific levels of ability they have the potential to deliver more accurate and reliable results than traditional examinations.

Strategies for Implementation of Computer Based Examination

In spite of the many challenges encountered in the implementation of CBE, lecturers should be prepared professionally to operate in the system. If the lecturer is not prepared adequately to perform in the system, it may lead to a tendency to manufacture scores in the name of continuous assessment. Lecturers should be encouraged to form favorable attitude towards the practice of continuous assessment and Ademiluyi et al.(2020)pinpointed that lecturers who are not well trained may have difficulties in the criteria for judging students on the objective outlined, which is one of the benefits of centrally developed continuous assessment system. Lecturers may bear negative attitude toward the CBE because of the absence of adequate orientation and training, lack of skill and knowledge without which they cannot appreciate and implement it. In the viewpoints of educators, proper training of lecturers and reduction of workload may alleviate the challenges.

Methodology

The study adoptsde scriptive research design and frequency count and percentage was used to analyze the demographic data of the respondents. The population of the study consist the lecturers and final year students of business education from the sixteen colleges of education that offers business education programme in North Central. The choice of final year students was based on the fact that they have been in the colleges system for more than two academics sessions, they are familiar with the department and can easily form an opinion on their course of study. Sample for the study was 414 (101 lecturers and 313 final year students) of

business education from colleges of education that offer business education in the area of study. Eight will be selected from the sixteen colleges of education that is, two colleges of education from each sector and two technical college of education. The instrument for data collection in this study was a questionnaire.

Mean and Standard deviation were used to analyze the data collected to answer the research questions. One-way ANOVA was used for the research hypotheses in order to investigate the occurrence of variations and different levels of measurable effect that exist among the variables. This has been proved to be one of the most effective instruments for comparing group of means(Olayiwola, 2007). All the null hypotheses will be tested at 0.05 level of significance (p = 0.05).

Results

What is stakeholder's perception of the strategies for implementing computer based examinations in Business Education programmes in colleges of education?

Table 1 Mean and Standard Deviation of Stakeholder perception on the strategies for implementing computer based examinations in business education programmes in Colleges of Education

S/N	Item	?	SD	Remarks
1.	Establishment of ICT policy that regulate and monitoring the implementation of computer-based examinations	3.52	0.673	Strongly Agreed
2.	A post -launch survey of test takers can be used to improve future versions of the test and associated test administration processes	3.21	0.650	Agreed
3.	Testimonials and "lessons learned" from other candidates who've already had the experience can be passed along to promote the benefits of the new test from candidate, partner or administrator perspectives	3.42	0.555	Agreed
4.	Provision of adequate educational presentations on computer -based examinations	3.00	0.642	Agreed
5.	Practice of both theoretical and practical training on the implantation of computer -based examinations	3.60	0.606	Strongly Agreed
6.	Provision of an effective and efficient information infrastructure	3.52	0.673	Strongly Agreed
7.	Provision of test drive for candidates with a real world, end -to-end practice run before the date of their scheduled test	3.21	0.650	Agreed
	Average Mean and Std.	**3.35**	**0.64**	**Agreed**

Source: Field Survey, 2023

Based on the data provided in Table 1, stakeholders strongly agree that the establishment of an ICT policy that regulates and monitors the implementation of computer-based examinations is a strategy worth considering, with a mean score of 3.52 and a standard deviation of 0.673. They also agree that conducting a post-launch survey of test takers can be used to improve future versions of the test and associated test administration processes, with a mean score of 3.21 and a standard deviation of 0.650.Stakeholders agree that testimonials and "lessons learned" from other candidates who have already had the experience can be passed along to promote the benefits of the new test from candidate, partner, or administrator perspectives, with a mean score of 3.42 and a standard deviation of 0.555. They also agree that the provision of adequate educational presentations on computer-based examinations is necessary, with a mean score of 3.00 and a standard deviation of 0.642. Additionally, stakeholders strongly agree that both theoretical and practical training on the implementation of computer-based examinations should be practiced, with a mean score of 3.60 and a standard deviation of 0.606.Stakeholders strongly agree that the provision of an effective and efficient information infrastructure is necessary for implementing computer-based examinations, with a mean score of 3.52 and a standard deviation of 0.673. They also agree that providing a test drive for candidates, allowing them to have a real-world, end-to-end practice run before the date of their scheduled test is beneficial. This received a mean score of 3.21 and a standard deviation of 0.650. Furthermore, the average mean and standard deviation values indicate agreement among stakeholders, with a mean score of 3.35 and a standard deviation of 0.64.

Table 2

Summary of analysis of variance (ANOVA) on the mean ratings of stakeholder's perception of the strategies of implementing computer-based examinations in Business Education programmes in colleges of education.

Analysis of Variance (ANOVA)

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.142	1	.142	1.170	.280
Within Groups	50.020	412	.121		
Total	50.162	413			

Source: Field Survey, 2023

There is no significant difference in the mean ratings of respondents on the strategies of implementing computer based examination in Business Education programme in colleges of education based on respondents' gender.The ANOVA table results provided below of between-groups sum of squares (SSB) is 0.142, with degrees of freedom (df) of 1 and a mean square (MSB) of 0.142. The within-groups sum of squares (SSW) is 50.020, with df of 412 and a mean square (MSW) of 0.121. The total sum of squares (SST) is 50.162, with df of 413.

Based on the ANOVA table it appears that there was no significant difference in the mean ratings of respondents on the strategies of implementing computer-based examination in Business Education programme in colleges of education based on respondents' gender. This is indicated by the F-value of 1.170 and the p-value of 0.280, which is greater than the alpha level of 0.05. Therefore, the null hypothesis (that there is no significant difference) cannot be rejected.

Discussion of Findings

Table 2 shows that there was no significant difference in the mean ratings of respondents on the strategies of implementing computer-based examination in business education program in colleges of education based on respondents' gender. This is indicated by the F-value of 1.170 and the p-value of .280, which is greater than the alpha level of .05. Therefore, the null hypothesis (that there is no significant difference) cannot be rejected. Reviewing the study of Al-Fraihat, et al. (2020). Evaluating the quality of e-assessment systems in higher education, the study found that e-assessment systems in higher education face challenges related to their usability, reliability, and security, and suggests strategies for improving the quality of these systems. Also, Reimann, Markauskaite, and Bannert (2014) carry out a research study on E-assessment and self-regulated learning. This study explores the potential benefits of e-assessment for developing self-regulated learning skills, and suggest strategies for incorporating feedback into e-assessment systems to enhance self-regulation.

Providing thorough training programs for lecturers, administrators, and students are crucial. These include technical skills training, familiarization with the examination platform, and effective use of digital tools. Ongoing support and refresher training should also be provided.

Establishing a reliable technological infrastructure is essential. This includes ensuring access to sufficient computer labs or devices, stable internet connectivity, and appropriate software or platforms. Regular maintenance and upgrades should be conducted to prevent technical issues and disruptions

Conclusion

Based on the stakeholder perceptions, the establishment of an ICT policy for regulating and monitoring computer-based examinations, the use of report and

lessons learned, and the practice of both theoretical and practical training are generally well-received strategies. However, the provision of educational presentations on computer-based examinations may have more mixed perceptions.Based on these results, it seems that stakeholders generally perceive the strategies employed in implementing CBE in Business Education programs in colleges of education as beneficial and important. They also emphasize the importance of avoiding complexity in the assessment process and providing clear standards for assessing students' performance.

Recommendations

1. Government maintain ongoing communication with stakeholders to address their concerns and provide updates on the progress and outcomes of the implementation. This will help build trust and keep stakeholders engaged and supportive.
2. Government should provide adequate training and professional development opportunities for educators to ensure they are equipped with the necessary skills and knowledge to implement computer-based examinations effectively. This will mitigate challenges and enhance the overall success of the implementation.

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