COMPUTER-BASED EXAMINATION AS A PREDICTOR OF EXAM ANXIETY AMONG UNDERGRADUATES IN ENUGU STATE, NIGERIA

By
Kelechi T. Ugwu
Department of Social Sciences and Humanities
Institute of Management and Technology, Enugu, Nigeria

and

Emmanuel J. Ogbozor
Department of Social Sciences and Humanities
Institute of Management and Technology, Enugu, Nigeria

Abstract
The growing trend of innovations in information, communication, and technology has created a pathway for rapid transformation of the education environment of the world. ICT systems in the school setting are gradually transforming the system from analog mode to a more digitalized environment. Perhaps, Nigeria's educational system is presently experiencing an increase in the adoption of computer-based assessment systems. Research has linked the phenomenon to increased exam anxiety among students. The present study aimed to examine exam anxiety among undergraduates in Enugu State based on the adopted computer-based examination system. One hundred and eighteen students pooled from public and private tertiary institutions participated in the study. Data for the research were collected using a self-report measure. The findings established a positive effect of the CBE system on the respondent's exam anxiety. The result and recommendations are discussed.

Keywords: Exam anxiety, CBE, Undergraduates

Background

One of the essential aspects of schooling that has attracted less research attention in recent years is exam anxiety. Perhaps, almost all students experience various nervousness and anxiety levels when faced with an exam, assessment, or performance situation. The feelings are common and natural response for many students in the preparation and during exams. Exam anxiety is the experience of an intense moment of fear or panic before or during an exam. It includes the psychological state of extreme distress and anxiety in examination situations. The trend is pervasive among students and has been implicated in adverse academic outcomes and diminished mental health (Aydin, 2019; Mavilidi et al., 2020), more so, physical health (Zhang & Qin, 20) overall student's well-being. Perhaps, research contends that exam anxiety impairs learning interest and often results in procrastination (Krispenz et al., 2019).

Similarly, the literature suggests that exam anxieties could be a risk factor in anxiety disorder (Kwon et al., 2020) and high drop-out rates (Vanstone & Hicks, 2019). Exam anxiety encompasses the phenomenological, physiological, and behavioral responses to evaluate the negative consequences (Donati et al., 2020). Exam anxiety is assumed to increase as an exam draws near (Lotz & Sparfeldt, 2017). The trend is widespread and detrimental to learning. (Danthony et al., 2020). Test anxiety affects student's ability to communicate knowledge during tests (Shadach et al., 2017). Although many students experience stress and anxiety before testing, certain degrees of tenseness are crucial in triggering mental alertness and preparing students to tackle the challenges presented in an exam. Most students express anxiety following the thought of academic

assessment. However, exam anxiety is not an illogical condition since it can serve a motivational function. Extensive literature has linked exam anxiety to student's academic performance (Balogun et al., 2017; Chapell et al., 2005; Hyseni Duraku & Hoxha, 2018; Morosanova et al., 2020), mental (Dai et al., 2020; Ng & Lee, 2016; Schaefer et al., 2007), and subjective well-being (Steinmayr et al., 2018). However, the current study is focused on determining the predictive role of computer-based examination on exam anxiety.

Recently, the educational system in Nigeria is witnessing a growing trend of computer-based examination in various levels of tests. Public and privatelyowned educational institutions have adopted the approach for various forms of assessments (Ogunmakin & Osakuade, 2014). CBE streamlines the examination systems, including generation, execution, evaluation, presentation, and archiving of results. This simplification saves time and money while improving reliability as information communication technology is increasingly utilized in the educational setting. Computer-based examination with flexibility, efficiency, and speed is gradually becoming an acceptable standard of administering exams across institutions in Nigeria. However, observation suggests that the CBE examination system is not entirely a welcome development to some undergraduates. For example, some institutions in Enugu state Nigeria, including the Institute of Management and Technology (IMT), Enugu state College of Education Technical (ESCET), and the University of Nigeria, Nsukka (UNN), are currently adopting CBE in their semester examinations for mostly the general courses. However, insinuations suggest that

most students are not comfortable with the system, thus, prompting elevated anxiety(Balogun & Olanrewaju, 2016; Nwagwu &
Adebayo, 2016; Olufemi, 2014). Nevertheless, CBE's purpose is not to assess the student's computer literacy or familiarity but to assess the student's knowledge and competence in the course being taken. Therefore, the current study aims to examine examination-related anxieties among undergraduates in Enugu state based on the CBE system.

Hypothesis

Based on the primary purpose of the study, an assumption was formulated; CBE will significantly predict exam anxiety among undergraduates in Enugu State.

Method

A cross-sectional survey design was used in this study. The study population includes first-year students in public tertiary institutions in Enugu State of Nigeria comprising the Institute of Management and Technology, Enugu State College of Education Technical, and the University of Nigeria, Nsukka. The participants comprising males and females were randomly pooled from the environment of the institutions. They included 100level students from different faculties who had taken their first exam using the schools' CBE assessment method. They were approached and asked to participate in the study. They were briefed on the purpose of the study and were also informed that participation in the study was totally voluntary. One hundred and twenty-two students consented to participate in the study and were given the instrument of study. A total of one hundred and eighteen (118) copies of the distributed instruments

were adequately filled and returned, while some were not returned and others discarded for improper filling. Thus, the 118 correctly filled instruments were subjected to statistical analysis.

Measure

Exam anxiety was measured using a modified version of the 22-item Cognitive Test Anxiety Scale developed by Cassady and Johnson (2002). It was revised and validated in Nigeria by (Balogun & Olanrewaju, 2016). Items in the scale were modified to suit the current study samples. The scale contains 15 items scored on a four-point Linkert-type scale ranging from (1 = not at all typical of me; 4 = very typical of me).Some of the items in the scale included: "I lose sleepover worrying about the computer-based test,""During the computerbased test, I find myself thinking of the consequences of failing," "At the beginning of a computer-based test, I am so nervous that I of ten cannot think straight. "The study adopted the procedure outlined in (Balogun & Olanrewaju, 2016).

Result Table 1:

Table showing the summary table of simple linear regression analysis performed to determine the influence of CBE on exam anxiety.

	95% CI for B							
	B	LL	UL	SEB	β	R^2	t	Sig
Constant	2.35	2.08	2.51	.134			17.59	.000
CBE	-.087	-.207	.32	.062	-.088	.531	-1.45	.000

Note. CBE = Computer-based Examination, B = Unstandardized regression coefficient; CI = Confident Interval; LL = Lower Limit; UL = Upper Limit; SEB = Standardized error of the coefficient; β = Standardized coefficient; R^2 = Coefficient of determination. *P<.000.

From the table above, the calculated value of F (1,116) = 3.21, P = .000 level of significance, revealed a significant influence of CBE on exam anxiety. The adjusted R^2 shows CBE contributed 53.1% of the variation in exam anxiety among the respondents. Thus, the result confirmed our assumption that the independent variable would significantly affect the dependent variable.

Discussion

The current study aimed to examine the predictive role of CBE on exam anxiety among undergraduates. The simple linear regression analysis performed on the data showed that CBE significantly predicted exam anxiety among the participants. Thus, our assumption that CBE will significantly predict exam anxiety among undergraduates was confirmed. Consistent with previous studies (Balogun & Olanrewaju, 2016; Nwagwu & Adebayo, 2016),the finding showed that the students in tertiary institutions in Enugu state of Nigeria feel anxious in relation to the CBE system. This outcome could be attributed to the student's poor exposure to academic-related technological innovations and the belief that the system cannot be manipulated, leading most of them to perceive CBE as anti-sorting. Accordingly, Mavilidi et al. (2020)attributed the phenomenon to anxiety- related thoughts occupying working memory resources during the exam that cannot be used for exam- related processes. Despite passing through series of computer-based tests before admission, such as the UTME and Post

UTME tests, respectively, the majority of the undergraduates still perceive CBE as foreign to the education system. Hence, there is the increase in CBE-related test anxieties. The finding indicates the prevalent of the phenomenon in our tertiary institutions and calls for urgent interventions to curb the trend and increase test awareness. The study suggests that school management should broaden the students' perception to accommodate CBE as part of the learning assessment.

Conclusion

The study provided insight into the growing effect of computer-based tests on student's exam anxiety. It is concluded that CBE triggers test anxiety. The study also revealed that exam anxiety is pervasive among undergraduates from public institutions in Enugu state. Thus, the research finding contributes to exam anxiety literature by showing CBE as a contemporary medium of assessment in the educational system of Nigeria that could trigger a psychological state of anxiety among students. Although, the study is challenged with certain limitations; for instance, due to the sampling method applied, caution is advised in generalizing the result. Because the data collection was based on self-report, the issue of common method variance becomes a concern. Nevertheless, the study recommends that school managements adopt simulation test exercises to prepare the students for exams and provide a robust enlightenment intervention.

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