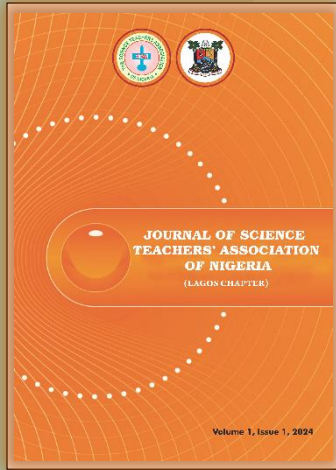




Conduct of WASSCE (PC 1), 2024 as CB-WASSCE: WAEC Nigeria's Experience

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ABSTRACT

The study investigated the conduct of WASSCE Private Candidates, First Series 2024 as Computer Based WASSCE in Nigeria. Four (4) research questions were formulated to guide the study. In the formulation of the research questions, experience of the candidates during the examination and that of staff were taken into consideration, survey design was adopted for the research and questionnaires were developed by the researchers titled CB-WASSCE candidates' Questionnaire (CBWASSCECQ) and CB-WASSCE Staff Questionnaire (CB-WASSCESQ) for data collection. The instruments were face validated and their reliability coefficients were established using Cronbach Alpha which gave reliability coefficients of 0.62 and 0.69 respectively. This study made use of purposive sampling technique in selecting respondents from the selected CB-WASSCE centres because of the large number of candidates in the centres. The selection covered Northern and Southern regions of Nigeria. An examination centre was selected from each of the mentioned geopolitical zones. The questionnaires were administered when major papers were taken. 90% of the candidates in the selected centres were sampled for the study. The data obtained were duly coded and analyzed using descriptive statistics (Percentages and frequency counts). The results showed that majority of the candidates and staff did not experience the challenges of network problem, power failure, unorganized and uncoordinated examination environment and other related technical problem which are associated with CBT model in literature. It was recommended among others that computer-based test should be encouraged in schools, CB-WASSCE should be extended to other diets of WASSCE and findings from CBT-based research should be disseminated to educational institutions for consideration.

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Introduction

Assessment serves several roles in the educational landscape, but perhaps its most essential role is to determine how well students have understood and remembered knowledge and abilities. It offers detailed information on children's academic progress, strengths, shortcomings, and areas in need of improvement to educators, legislators, and other stakeholders. Through a methodical evaluation of student performance, assessment not only confirms the effectiveness of instructional strategies but also makes focused interventions to close learning gaps and improve student outcomes possible. In addition, assessment helps the educational system to develop a transparent and accountable culture. It gives students the autonomy to take charge of their education while holding instructors responsible for the quality of instruction and curriculum delivery. Assessment gives students a feeling of direction and purpose by establishing clear expectations and benchmarks, which inspires them to reach their greatest potential. Assessment therefore, is a critical part of the educational process, especially where teaching and learning are involved. It is an indispensable component of curriculum practice and serves as a reliable means in the determination of the ability that students can demonstrate because of increase in knowledge due to learning (Mikre, 2011). It is often deployed when decision is to be made especially in high-stake examinations. So, without assessment, sorting of students based on their competence levels would be difficult. Therefore, it is useful at every level of education. In carrying out the task of assessment, efforts should be made at ensuring that assessment is not merely done to students, rather, it should also be done for students to guide and enhance their learning (National Council of Teachers of Mathematics, 2000).

Assessment is equally important in the sequence of education in Nigeria because it helps to know the

candidates that should move from one level to the other in the educational sequence. In the educational ladder, learning begins from primary education to secondary education and continues to the national college of education or polytechnic or university. At every stage in this progression, assessment is important because it involves the process of collection of reliable data and analysis of the data in order to gain a deep insight into what students know or understand and what they can do with their knowledge as a result of their educational experiences. In line with this opinion, Ayodele et al (2009) emphasized the importance of assessment in the collection of reliable data for decision making about a group of learners which could be used for promotion, certification and placement. There are examining bodies in Nigeria that are directly involved in the conduct of examination in the public interest and also use the scores from the examination for certification. Notable among them is The West African Examinations Council.

The West African Examinations Council (WAEC) is an examining body which was formally established in 1952 following the adoption of the Jeffery Report of 1950. The Council has five member countries namely Ghana, The Gambia, Nigeria, Liberia and Sierra Leone, and they are bonded by the vision of conducting the West African Senior School Certificate Examinations in the public interest (WAEC, 2016). At the commencement of examinations by WAEC and years of her existence, pencil and paper test was the most popular mode of assessing candidates before the deployment of Computer Based Examination tagged CB-WASSCE for Private Candidates, 2024-First Series in the year 2024. This popular trend in assessment is in consistent with a statement by Abanobi (2022) that pencil and paper test is the most commonly used assessment technique in Nigeria and it is a technique that allows students to be assessed by using paper



and pencil as opposed to an examination that is taken electronically via computer. So, this means that the pencil and paper test has gained prominence, even at school level and it is often deployed as a means of assessment. In a pencil and paper test, question papers are presented to the candidates and also provision for answer booklets is made for them.

However, over the years, researchers have documented the challenges that are associated with pencil and paper test. Abubakar et al (2014) noted that high cost of printing examination materials, high rate of examination malpractices among candidates and poor supervision are some of the challenges that are associated with pencil and paper test. The upsurge in the cases of examination malpractice among candidates have been having a serious effect on the integrity of The West African Senior School Certificate Examinations. As observed by Onyibe et al (2015), examination malpractice has a grave consequence on individuals and institutions of learning, and if it is allowed to continue unchecked, it may further dip the educational system in a sorry state. In a bid to improve the integrity of WASSCE through technologically driven approach in line with the international best practices, the Council over the years has invested hugely in technology. Some of the products of the reforms by the Council are: Edustat, Chatbot, E-certman, E-learning platform, Fair hearing platform, WAEC connect, E-item banking to mention, but few. Just of recent, her first ever computer-based test in Nigeria called CB-WASSCE was unveiled. The examination was conducted in a hybrid mode of examination which allowed candidates to read the questions on the computer screen, click on the correct option on the screen for objective questions while they write the answers in their answer booklets in the case of essay type test. The examination was written in different centres across the country between January 31 and February 17, 2024. This giant stride by the organization

appears to have further reinforced the roles of technology in assessment.

Malec (2020) sees computer-based test as a computer form of pencil and paper test. Atkinson and Davies (2010) described Computer Aided Assessment as any instance in which some aspects of computer technology are deployed as part of the assessment process. Furthermore, Samuel et al (2021) examined the advantages of computer aided assessment and noted that it could drive efficiency in terms of improvement of measurement without increasing assessment time, accuracy in measurement across a wide range of examinees, more equitable assessment conditions, greater uniformity in the accuracy of the traits being measured across different proficiency levels of examinees, which could enhance better informed decisions. (Ockey, 2009; Brown 2016) argued that there are many unquestionable advantages of computer-based test such as greater efficiency and accuracy, potential of increasing the motivation of students, reliability and accuracy in scoring because the computer-based model can handle errors. However, Danladi et al, (2021) argued that challenges such as the problem of ICT infrastructure, poor internet network, inadequate computers and cybersecurity among others could mar the efficiency of the model. Abubarkar and Adebayo, (2014) equally noted that resistance to change, insufficient power supply, lack of knowledge, low competency, shortage of qualified personnel, shortage of facilities such as computer and related devices and unstable internet networks could hamper the smooth conduct of CBT. These anticipated challenges informed the researcher to conduct the study on the challenges and also explore the prospects of CB-WASSCE which was conducted by WAEC for private candidates, first series.



Statement of the Problem

The West African Examinations Council is a globally recognized examining body that conducts West African Senior School Certificate Examination for candidates in The Gambia, Ghana, Liberia, Nigeria and Sierra Leone. Since her establishment in 1952, the examining body has been conducting examinations in the mode of pencil and paper test. After many years of conducting examinations in this mode, the Lagos Office of the body conducted the West African Senior School Certificate Examination for Private Candidates, first series by deploying technology for the conduct of the examination, instead of the popular pencil and paper test. Consequently, some challenges were anticipated by some members of the public as to whether notable challenges such as epileptic power supply, network problem and availability of facilities would mar the integrity of the examination. Consequently, this study assessed the conduct of WASSCE (PC 1), 2024 as CB-WASSCE in Nigeria.

Purpose of the Study

The findings of the study will:

1. acquaint test administrators on the benefits of deploying CBT for conducting examinations;
2. inform the government on the need to leverage on technology for the improvement of the standard of education in the country;
3. reveal the challenges that are inherent in conducting public examinations using the CBT mode.

Objectives of the Study

The study will:

1. find out the challenges that were encountered during the conduct of the CB-WASSCE as perceived by candidates and staff.
2. examine the prospects of CB-WASSCE in the future.

Research Questions

The following research questions guided the study.

1. What are the challenges of conducting CB-WASSCE for Private Candidates-first series 2024 in Nigeria as experienced by candidates?
2. What are the prospects of CB-WASSCE as perceived by candidates?
3. What are the challenges encountered by WAEC staff during the conduct of CB-WASSCE?
4. What are the prospects of CB-WASSCE as perceived by staff?

Methodology

This study made use of survey design to avoid manipulation of variables. The population of the study comprised all candidates that sat WASSCE Private Candidates-first series. Purposive sampling technique was used to select candidates who participated in the study so that the researcher could gather sufficient data from the respondents. The sample size was 540 candidates which consists of 320 males and 220 females. For a quantitative and in-depth collection and interpretation of data, the researcher developed two questionnaires for candidates and staff named CB-WASSCE candidates' questionnaire (CBWASSCECQ) and CB-WASSCE staff questionnaire (CB-WASSCESQ). The questionnaires were structured into three-point Likert-type rating scale (Yes, No and N/A) and four-point Likert-type rating scale (SA, A, SD and D). The items in the questionnaire were carefully structured and validated by experts' judgement. Test-retest reliability coefficient of the questionnaires using Cronbach Alpha Reliability index is 0.62 and 0.69 respectively. This showed that the instruments were reliable. Research Assistants were recruited and helped in the collection of data from the examination centres. The data were



analyzed by using descriptive statistics, frequency counts and percentages. The research questions were answered by determining the percentages of the respondents who ticked the various options of the items relevant to the questions.

Results

Research question 1: What are the challenges of conducting CB-WASSCE for Private Candidates-first series 2024 in Nigeria as experienced by candidates?

Table 1: Challenges experienced by candidates during the conduct of CB-WASSCE

S/N	Item	Yes		NO		Missing	
		F	Percent	F	Percent	F	Percent
1	Did you find it difficult to read some questions?	72	13%	448	83%	20	4%
2	Was the screen resolution of the computer good	456	84%	67	12%	17	3%
3	Did you experience network failure while writing a paper?	88	16%	431	80%	18	4%
4	Did the examination start as scheduled on the timetable?	444	82%	73	14%	23	4%
5	Were technical staff on ground to immediately resolve technical problems?	482	89%	30	6%	28	5%
6	Were you able to understand and interpret the commands on the computer?	487	90%	35	7%	18	3%
7	Did you have difficulty in managing your time?	177	33%	325	60%	37	7%

Table 1 shows that candidates experienced minimal challenges, the inability to read questions on the computer screen, network failure, starting of examination at scheduled time, availability of technical staff that attended to their technical challenges, ability to interpret computer commands and difficulty in the management of time. The percentages of their “yes” responses to the positive questions were high indicating that majority of the candidates did not experience the challenges. In addition, the “no” responses of the candidates to negative questions were high from the percentages of the respondents.

Research question 2: What are the prospects of CB-WASSCE as perceived by candidates?

Exploring candidates' perceptions CB-WASSCE provides valuable insights into their readiness, expectations, and potential barriers to the successful adoption of CB-WASSCE. Some of the candidates' perceived prospects of CB-WASSCE involve tackling examination malpractice, ensuring clarity in questions, maintaining a well-organized examination room, controlling examinees' late arrival, and guaranteeing a reliable examination score. The result of the candidates' perceived perception is described as follows.

**Table 2:** Candidates perceived prospects of CB-WASSCE

S/N	Item	SA	A	SD	D	System
1	CB-WASSCE could tackle examination malpractices	203(37.6)	200(37)	64(11.9)	23(4.3)	50(9.3)
2	The questions were clearer than the pencil and paper test	257(47.6)	187(34.6)	20(3.7)	20(3.7)	56(10.4)
3	The examination room was well-organized	311(57.6)	158(29.3)	8(1.5)	8(1.5)	55(10.2)
4	Late arrival of candidates to examination venues could be controlled by CB-WASSCE	175(32.4)	222(41.1)	54(10.0)	36(6.7)	53(9.8)
5	CB-WASSCE should be used for all examinations	201(37.2)	107(19.8)	117(21.7)	63(11.7)	52(9.6)
6	Examination scores will be more reliable if CB-WASSCE is used	236(43.7)	175(32.4)	35(6.5)	38(7.0)	56(10.4)
7	I have confidence in CB-WASSCE to improve the standard of education	214(39.6)	198(36.7)	53(9.8)	25(4.6)	50(9.3)

Table 2 shows that candidates highly rated the indicators that could contribute to the prospects of CB-WASSCE, based on the percentages of the candidates that responded to the rated items. Of the rated items, respondents strongly agreed to the prospects of CB-WASSCE in curbing examination malpractice, presentation of clearer questions, control of late arrival of examination materials,

reliability of examinations scores and improvement in the standard of education through CB-WASSCE.

Research question 3: What are the challenges encountered by WAEC staff during the conduct of the CB-WASSCE?

Table 3: Challenges encountered by staff during the conduct of CB-WASSCE

	Item	SA	A	SD	D	Miss
1	The procedure for setting up the CB-WASSCE server was easy	27(43.5)	34(54.8)	1(1.6)		
2	There were no technical issues experienced in the conduct of CB-WASSCE	27(44.0)	22(35.5)	6(9.7)	5(8.1)	2(3.5)
3	No technical skill is required for the conduct of CB-WASSCE	4(6.5)	18(29.0)	1(1.6)	34(54.8)	3(4.8)
4	The facilities in the examination Centre were not adequate	1(1.6)	3(4.8)	37(59.7)	17(27.4)	4(6.5)
5	Some candidates could not operate the computer	3(4.8)	7(11.3)	34(54.8)	14(22.6)	4(6.5)
6	On an occasion, power failure disrupted the examination	1(1.6)	4(6.5)	38(61.3)	14(22.6)	5(8.1)
7	There were adequate staff to attend to technical issues	42(67.7)	12(19.4)	2(3.5)	2(3.5)	4(6.5)



Table 3 clearly revealed that the procedure for setting up the CB-WASSCE server was easy as majority of the respondents strongly agreed or agreed to the statement. Also, it was revealed that a large percentage of the respondents strongly agreed or agreed that there were no technical issues experienced during the conduct of CB-WASSCE. They also disagreed to the statement on inadequacy

of the facilities in the examination room and the inability of some candidates to operate computer system. However, majority of the respondents strongly agreed and agreed that there were inadequate staff to attend to technical issues.

Research question 4: What are the prospects of CB-WASSCE as perceived by staff?

Table 4: Staff perception on the prospects of CB-WASSCE

S/N	Item	SA	A	SD	D	Missing
1	CB-WASSCE could tackle examination malpractices	40(64.5)	11(17.7)	6(9.7)		5(8.1)
2	The questions were clearer than pencil and paper test	41(66.1)	16(25.8)			5(8.1)
3	The examination room was well organized	46(74.2)	11(17.7)			5(8.1)
4	Late arrival of candidates to examination venues could be controlled by CB-WASSCE	31(50.0)	17(27.4)	7(11.3)	1(1.6)	6(9.7)
5	CB-WASSCE should be used for all examinations	12(19.4)	31(50.0)	9(14.5)	3(4.8)	7(11.3)
6	CB-WASSCE is more efficient than paper and pencil test	39(62.9)	11(17.7)	2(3.2)	4(6.5)	6(9.7)
7	I have confidence in CB-WASSCE in improving the standard of education	41(66.1)	10(16.1)	2(3.2)	3(4.8)	6(9.7)

Table 4 showed that majority of the respondents agreed that CB-WASSCE could tackle examination malpractice and equally agreed that the test questions were clearer than pencil and paper test. Majority of the respondents in the percentage of 74.2 % agreed that the examination room was well organized. In addition to this, 50.0 % agreed that late arrival of candidates to examination hall could be controlled by the deployment of CB-WASSCE. Furthermore, 19.4% and 50.0% agreed that CB-WASSCE should be deployed for all examinations. 62.9 and 17.7 strongly agreed and agreed that CB-WASSCE is more efficient than paper and pencil test. 66.1% and 16.1 % strongly agreed and agreed that they have confidence in CB-WASSCE in improving the standard of education.

Discussion

The finding on research question one indicated that the anticipated problems such as poor screen resolution, network failure, late commencement of the examination, technical related problems and ability to understand the commands of the computer were not experienced by majority of the candidates who sat the examination. This is in agreement with the findings of (Brown, 2016; Samuel et al, 2022; Ockey, 2009) who revealed that computer aided assessment could drive efficiency in terms of improvement of measurement without increasing assessment conditions, greater uniformity in the accuracy and efficiency.

The finding on research question two was on prospects of CB-WASSCE as perceived by candidates. It was revealed that majority of the



candidates agreed that based on their experiences in the examination, CB-WASSCE could tackle examination malpractice and they agreed that it should be used for all examinations because of its effectiveness. To this end, the result is in consistent with the findings of Samuel et al., (2021) and Nwoke who reported that computer-based mode of testing is efficient and can be deployed in tackling examination malpractice which is bedeviling the standard of education in the country.

The finding on research question three as revealed by the staff at the CBT centres showed that the challenges that were initially anticipated by the public such as power failure and internet problem related problems were not experienced. This finding disagrees with Abubakar and Adebayo (2014) who reported that poor power supply, low competency and shortage of facilities would hamper the smooth conduct of CBT if it is deployed in assessment.

The finding on research question four as reported by the staff on prospects of CB-WASSCE indicated that it could be used to control a lot of inadequacies that are associated with paper and pencil test. This is in agreement with the report of Samuel, Ngozi & Agnes, (2021) who reported that CBT is more efficient when compared with paper and pencil test in tackling the scourge of examination malpractice.

Conclusion

CB-WASSCE was a brainchild of WAEC which was deployed in the conduct of PC 1, 2024 for candidates in Nigeria. It was an innovative model that has helped in mitigating a lot of challenges that were associated with pencil and paper test. If the model is well deployed through proper planning, the fears of network failure and other related challenges which were mentioned in literature will not be experienced. With this model, problem of examination malpractice could be resolved.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Computer-based test should be encouraged in secondary and post-secondary schools to enhance quality assessment.
2. Proper planning should be done before executing the model, especially in high stake examinations.
3. CB-WASSCE should be extended to other diets of WASSCE and should be structured in such a way that candidates will be able to choose between CB-WASSCE and pencil and paper test.
4. Findings of CBT based research should be disseminated to educational institutions for proper information.
5. Government should increase the budgetary allocation to education to promote technology-driven educational system.
6. School curriculum should make the study of computer science compulsory at secondary school level.

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