SUB-THEME: LEVERAGING TECHNOLOGY IN EDUCATIONAL ASSESSMENT

LEVERAGING TECHNOLOGY TO ENHANCE EDUCATIONAL ASSESSMENT: EXPLORING INNOVATIONS AND BEST PRACTICE - JAMB PERSPECTIVE.

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INTRODUCTION

The world is changing rapidly in many ways, with the most significant change being in Information and Communication Technology (ICT), which has far-reaching implications for how we act and interact in civic life, at home, and school, among others. Consequently, this change constitutes the driving force behind many of the other major changes in the world, such as globalization and flexibilization.

The role of education in the 21st century is crucial for a nation's development. This significance is especially pronounced in Nigeria, where the education system has benefited immensely from ICT, yielding favorable results. Information and Communication Technology (ICT) enhances the effectiveness and volume of teaching, learning, and research within institutions that utilize it.

The implementation of methods like the computer-based Test (CBT) has dramatically changed the reliance on traditional assessment approaches to a more modern examination format, providing a contemporary learning experience for both educators and students.

JOINT ADMISSIONS AND MATRICULATION BOARD (JAMB)

The Joint Admissions and Matriculation Board (JAMB) is a Nigerian entrance examination board for tertiary-level institutions. The board conducts the Unified Tertiary Matriculation Examination for prospective undergraduates into Nigerian universities. The board is also charged with the responsibility to administer similar examinations for applicants to Nigerian public and private monotechnics, polytechnics, and colleges of education. All of these candidates must have obtained the West African Senior School Certificate (WASSCE) conducted yearly by the West African Examinations Council, WAEC, or its equivalent, the National Examination Council (Nigeria), Senior School Certificate Examination, NECO SSCE.

STATEMENT OF PROBLEM

Traditional assessment methods used by JAMB have been associated with several challenges, including logistical inefficiencies, examination malpractice, and delays in processing results, etc. especially in large-scale assessments like JAMB. These issues undermine the integrity of the admission process and hinder prospective students seeking entry into tertiary institutions.

PURPOSE OF STUDY

- This study sought to identify and explain how the Joint Admissions and Matriculation Board (JAMB) has leveraged Information and Communication Technology (ICT) in its Assessment process and how it can improve on it using the current ICT trend.

TECHNOLOGICAL INNOVATIONS IN JAMB'S OPERATIONS

JAMB has leveraged several technological tools to address these challenges:

- Computer-Based Testing (CBT)
- Online Registration
- Result Processing and Release
- Centralized Database Management
- Biometric Verification

TECHNOLOGICAL INNOVATIONS IN JAMB'S OPERATIONS CONT'D

- Online Customer Support Systems
- Real-Time Monitoring of Examination Centers
- Collaboration with Educational Institutions
- Feedback and Survey Mechanisms
- Enhanced Communication Channels

TECHNOLOGICAL INNOVATIONS IN JAMB'S OPERATIONS CONT'D

E-Registration: The e-registration procedure requires candidates to generate a profile code by texting their NIN number to the JAMB short code 55019. A code is sent to the candidate's phone number, which he uses at a JAMB-accredited center to purchase an e-pin to start the registration process. Registration fees can be paid through various online platforms, including banks and payment gateways. This reduces the burden of physical queues at banks and JAMB offices.

CBT: JAMB shifted from traditional paper-based exams to Computer-Based Testing (CBT), facilitating a more modern and efficient examination system. This method reduces logistical issues associated with printing, transporting, and distributing examination papers. Following the introduction of CBT, the board took sufficient steps to guarantee that the deployment exam in CBT mode is error-free.

TECHNOLOGICAL INNOVATIONS IN JAMB'S OPERATIONS CONT'D

Biometric Verification: Candidates are required to undergo biometric verification, which captures their fingerprints during registration and re-verification at examination centers. This significantly reduces the incidence of impersonation or fraudulent practices. The biometric system ensures that only registered candidates take the exams, enhancing the integrity of the examination process.

Result Processing and Release: Efficient Result Computation: ICT tools enable the rapid processing of examination results through computer algorithms that assess candidates' answers against the provided answer keys. Streamlined, technology-based exam management featuring smooth digital distribution and immediate Automated scoring, lowering manual tasks, decreasing mistakes, and providing rapid, precise outcomes for both candidates and administrators.

TECHNOLOGICAL INNOVATIONS IN JAMB'S OPERATIONS CONT'D

Centralized Database Management: Comprehensive Data Management: JAMB maintains a centralized digital database that holds the records of all candidates' registrations, exam performances, and admissions. This data management system facilitates easy retrieval and reduces administrative errors

Online Customer Support Systems: JAMB has created a department, Servicom, and an online customer support system that includes a comprehensive FAQ section, and live help desks where candidates can ask questions and resolve their issues efficiently. Candidates can provide feedback on their experiences with the registration and examination processes, which aids JAMB in improving services.

TECHNOLOGICAL INNOVATIONS IN JAMB'S OPERATIONS CONT'D

Real-Time Monitoring of Examination Centers: The implementation of CCTV cameras and other monitoring technologies allows JAMB to oversee examination centers in real-time. This helps in promptly identifying and addressing any irregularities during the exam. This also enables JAMB officials to analyze examination processes and candidate behaviors to uphold exam integrity.

Collaboration with Educational Institutions: JAMB collaborates with universities and other tertiary institutions through integrated digital platforms. This makes it easier for institutions to access candidates' admission records in real time

TECHNOLOGICAL INNOVATIONS IN JAMB'S OPERATIONS CONT'D

Feedback and Survey Mechanisms: JAMB conducts surveys before examinations to gather feedback from candidates about their experiences, which can be analyzed to make informed decisions about future examinations. This feedback loop enables JAMB to adapt, modify, and enhance its processes based on direct input from stakeholders (candidates, educators, and institutions).

Enhanced Communication Channels: JAMB utilizes social media platforms to communicate updates, exam schedules, and important announcements to candidates. This real-time communication helps ensure that candidates are well-informed. Candidates can receive automated updates and alerts regarding their registration status, examination schedules, and results, improving the overall flow of information.

CONCLUSION

Through these comprehensive ICT initiatives, JAMB has transformed its examination management procedures, enhanced efficiency, accessibility, and security, while also elevating the overall experience for candidates. These measures not only preserve the validity of the assessment but also illustrate a commitment to embracing technology in education, ultimately contributing to the development of a more robust educational system in Nigeria. JAMB's use of ICT serves as a model for other academic and examination bodies seeking to enhance their procedures for better service delivery.

RECOMMENDATIONS

Given the rapid advancements in artificial intelligence (AI) and its transformative potential across sectors, it is recommended that the Joint Admissions and Matriculation Board (JAMB) strategically adopt AI-driven solutions to enhance operational efficiency and examination integrity.

Jamb can bring in different AI-powered innovations to enhance its operations, like;

RECOMMENDATION CONT'D

- **AI-Powered Monitoring for Examination Integrity:** Artificial intelligence (AI) can be deployed by JAMB to enhance surveillance and fraud detection throughout the registration and examination processes. Machine learning algorithms can analyze behavioral patterns, biometric data, and transactional records to identify irregularities such as impersonation attempts, duplicate registrations, or other fraudulent activities.
- **AI-Powered Anomaly Detection for Examination Monitoring:** Artificial intelligence (AI) can enhance examination oversight by detecting anomalous behaviors in real time. Machine learning algorithms can analyze candidate interactions, flagging irregularities such as unusually rapid response patterns, atypical answer sequences, or attempts to access unauthorized materials.
- **Network Jammer:** To mitigate examination malpractice, JAMB could implement network jamming devices across its examination centers nationwide. These devices would disrupt mobile network signals, preventing candidates from accessing the internet or engaging in unauthorized communication via calls or text messages. Even if candidates successfully smuggle mobile phones into the examination hall, the jamming technology would render such devices ineffective, thereby upholding the integrity of the examination process.

RECOMMENDATION CONT'D

- **Automated Question Generation Using Artificial Intelligence:** Artificial intelligence (AI) can be leveraged to enhance the design of examination questions by analyzing extensive datasets to ensure balance, fairness, and the elimination of bias. Machine learning algorithms can assess question difficulty, relevance, and distribution across topics, ensuring that assessments accurately measure candidate knowledge while maintaining equity.
- **Data-Driven Examination Analytics:** AI-powered data analytics can systematically evaluate candidate performance, examination difficulty, and instances of malpractice. By processing large-scale assessment data, these systems can identify patterns, anomalies, and areas requiring institutional improvement. Such insights enable examination bodies like JAMB to refine testing methodologies, adjust scoring models, and strengthen security protocols in an evidence-based manner.
- **Predictive Analytics for Examination Security:** AI-based predictive modeling can assess historical and real-time data to identify examination centers with elevated risks of malpractice or logistical disruptions. By forecasting potential vulnerabilities, examination authorities can implement preemptive measures, such as increased surveillance or resource allocation, to mitigate irregularities before they occur.

The integration of contemporary AI technologies can streamline administrative processes, improve fraud detection, and optimize candidate assessment, thereby fostering a more seamless and robust examination system. This technological integration aligns with global best practices in educational assessment and positions JAMB at the forefront of innovation in standardized testing.

According to Nelson Mandela “Education is the most powerful weapon which you can use to change the world ”
Today Technology is sharpening that weapon

THANK YOU FOR LISTENING