



## Administrative Scaffolding with e-Tools for Strengthening ICT-Driven Internal and External Quality Assurance in African Universities

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Publication Date: 2025/11/28

### Abstract

Digital inclusion is a must for African Universities to attain a technologically driven workspace for effective and efficient management of human and material resources. Determining the rate of success of African universities will be dependent on the maneuverability of the university communities' managers in meandering through the virtual storms of digital inadequacies. This study adopted a descriptive survey to analyze the qualitative views of adopting the Technology Acceptance Model as a tool for Scaffolding administrative bricks using e-tools for building ICT – proof internal and external quality assurance of African universities. The result from the qualitative review revealed that although some of these technologies are there, staff and students still feel reluctant toward adoption and utilization is still very slow and low in some institutions. Scaffolding these challenges can be eliminated using the Technology Acceptance Model to scaffold Administrative Bricks with e-tools for building ICT- proof internal and external quality assurance in African Universities. It is recommended that Vice-Chancellors, quality assurance directors, educational managers, and all categories of leadership in African Universities should move with the trends of global development and ensure digital inclusiveness fully scaffold with administrative bricks that will accelerate all-round growth, global academic visibility, reduction of paper usage and wastages, save money and eradicate administrative bottlenecks from the African universities and achieve both internal and external quality assurance.

**Keywords:** *Quality Assurance, Scaffold, Administrative bricks, e-tool, ICT-proof*

### Introduction

School systems are often faced with the challenge of providing effective education for all children and young adults that will prepare them for inclusive participation in the workplace, social, political, sports, and every area of their endeavor. (United Nations Education, Scientific, and Cultural Organization (UNESCO); Hooker, 2009). A technology-inclusive education is an important pivot for accelerating the internal and external quality assurance of African Universities in this technological age. Their rate of success will be dependent on the maneuverability of the university communities' managers in meandering through the virtual storms of digital inadequacies as well as developing ways of supporting teachers and students caught in the emergency of the inequality to access to e-tools left in the hands of individual institutions. This is so because things cannot change except people determine and persevere to change things. To facilitate the management processes of the universities in

Africa, there is the need to scaffold administrative bricks with e-tools in building ICT-proof internal and external quality Assurance technology-inclusive leadership and management process. Just as Scaffolds are temporary support structures used in a building construction site to support workers as they work, so should the Chief Executives, Heads, educational managers, and administrators provide administrative visual bricks scaffolded with e-tools to support both human and material resources in organizational growth and development. Scaffolding Administrative Bricks with e-tools is a vital strategy for building ICT-proof internal and external quality assurance frameworks for African Universities. Scaffolding administrative processes with e-tools is a veritable instrument for ensuring easy introduction, assimilation, evaluation, and execution of policies, procedures, and plans. Introducing Scaffold in administration can be referred to in our terms, as the structures, policies, and frameworks put in place for

effective guidance, sequences to follow in managing man and materials to achieve organizational goals and ensure both internal and external quality control.

Attempting a new project might sometimes seem daunting without a designed pattern or framework to follow, like introducing a new policy in an organization or a new scientific or programming concept can fill your students or staff with a feeling of dread. Kampe 2020 described scaffolding in education as the instructional method used by teachers to show students how to solve problems, offering support as they need it. Like the teacher or a construction crew, the Chief Executives and Administrators should build scaffolds to help support their staff and students in policy formulation and execution so as to forestall the challenge of poor storage and retrieval of students' and administrative records, executive stress, financial loopholes, examination irregularities, facilities mismanagement, depletion, and depreciation. As the staff accepts and internalizes the information and shows signs of understanding and integration, the Chief executive/Administrators gradually remove the scaffolds to enable independent interaction and operation.

The scaffolds that Chief Executives, Vice-Chancellors, and administrators use might differ, depending on the organization's structure, culture and climate. Although some studies have been done on scaffolding in education, teaching, and learning, there is no study to the knowledge of the authors, on the Scaffolding of Administrative Bricks with e-tools for building ICT- proof internal and external quality assurance in African Universities.

### **Literature Review**

The competencies that are required to succeed in this century are quite different from those used earlier during the previous industrial revolution because human and machine augmentation era as opined by (Jame, Humez & Laufenberg (2020) is here. Universities in Africa that prepare students for success have to step up their digital skills to enable them to produce graduates that are adequately equipped for the 4th industrial revolution workforce. This is in line with Castellanos-Reyes, (2020) opinion that educational managers need to take advantage of the potential opportunities for communication between students and instructors by applying the social presence of the community of inquiry framework that encourages a collaborative digital learning environment. The social presence enables connection with peers, and colleagues through 'computer-mediated communication' (Garrison et al, 2000; Swan and

Ice 2010; Castellanos-Reyes,(2020). The teaching presence enables the Chief executives to assume managerial responsibilities where managerial task becomes a shared responsibility between the managers. Staff, students, and the general university community (Anderson, Rourke, Garrison, & Archer (2001). Forging ahead, Agbor,(2018) the Commissioner for Human Resources, Science and Technology, African Union commission in her foreword to African Quality assurance document stated that quality higher education can only be achieved in Africa if there is proper implementation of the African standards and Guidelines for Quality Assurance in Higher Education (ASG-QA) that will ensure that qualifications obtained by students and their experience of higher education remain consonant with programme requirements, institutional vision and mission and the objectives of higher education. These objectives can be achieved through the inculcation of a culture of evidence-based quality in all their activities. This opinion lay credence to Matovu .M (2017) study on the " The State of Internal Quality Assurance Systems in Ugandan Universities: Issues, Opportunities and Challenges" stating that putting in place functional internal quality assurance systems is the only way universities can advance and also enhance quality in the services they offer. He further revealed that some universities in Uganda and in the region lack the will of advancing and enhancing functional quality assurance systems despite having the means. while some universities having the zeal to implement and operationalize quality assurance systems, they lack adequate resources to do. The implication is that the African quality assurance framework system should be enforced in all African universities to ensure equal ground of operations.

### **Communication in University organization**

Digital inclusiveness in managing communication and correspondence for quality internal and external assurance in African universities is a key player in the development of an effective and efficient communication flow. Tracking mails history and administrative correspondences effectively can be achieved seamlessly using administratively scaffolded e-tools. Mails received and recorded manually can be cumbersome as compared with mails received and stored digitally using the Microsoft excel software e-tool. When the history of mail/correspondence is entered with the date received; from whom; Description/Subject of the mail; To whom; purpose; Vital comments; movement track: When in and when out. This method eradicates the repetition of entries of a

single mail in various registers that might take a long time to trace whereas using the excel e-tool as an administrative scaffold place all the details, comments, and actions taken on the mails on the same roll until it gets to its final destination.

### **Digital inclusive Quality assurance in Staff personnel Administration**

In managing men and materials resources, the African universities are required to be well equipped with ICT infrastructural facilities, be vast in the use of the computer and its accessories, skillful in accessing the internet, and adequate use of software packages that will enhance their excellent job performance such as the use of Database packages that will enable her to manage staff and students records adequately.

- These packages enable Vice-Chancellors, Educational managers, administrators, and heads to keep track of student enrolment figures, the rate of failures, dropouts, and monitor students' progress.
- Adequate personnel records can be used to calculate the workers' output, performance evaluation, and indicators such as labour turnover, absenteeism, lateness to work, quality of work, and Key performance indicators (KPI). Keeping an adequate database can be obtained using specialized programmes or software packages that can equip the personnel managers with the ability to identify either positive or negative trends in the institution.
- The introduction of e-payment of salaries, and students' fees will assist in checking the incidence of financial anomalies.

Scaffolding administrative virtual bricks with e-tools is a very vital strategy in the performance assessment of staff. In assessing key performance indicators of staff and students, Chief Executives, Heads of units can scaffold different administrative development goals using e-tools to prompt, guide, and support staff performance e achievement. In achieving these goals, these supports can come in the form, of job performance rules/guidelines, training and development programs, on-the-job assessments, reminders, hints, rewards, and restrictions to ensure the successful completion of a task. Staff evaluation in most cases in most African universities is usually done once every three years as is the case during the promotion year. However, it is important that staff are evaluated more than once before promotion using desirable key performance indicators to elicit information about the staff performance on the job. This can be done by the human resource personnel or Officers of the

organization who sends out survey forms to staff through the institutional emails asking vital performance indicator questions, which each staff must respond to and further verified by the supervising head of the staff and is further authenticated over time or a period of time.

### **Staff development:**

Routine and periodic training of university staff should be a culture that should be cultivated to achieve both internal and external quality assurance of the /African Universities. An example is the case study of the institutional training procedures (Delta State Learning management system and the Digital Bridge Institute (DBI) Adapti programme that carry out periodic training sessions for Staff of tertiary universities in Nigeria.

### **Digitally Inclusive Facilities maintenance and Renewal for Quality Assurance**

Facilities acquisition, maintenance, and renewal are a hallmark for accessing the degree of the quality, safety, durability, and aesthetics of the learning environment which invariably affects students, teachers, and the learning environment in varying ways. The goal of maintaining internal and external quality assurance of higher education at a reasonable cost can only be achieved through the management and maintenance of available infrastructural facilities for learning. Proper maintenance of physical facilities will lead to a quality higher education system which will in turn produce improved quality skills, that will accelerate economic growth and sustain ability. There are innovative technologies as listed by JeffRevoy (2021) that can help enhance physical facilities' internal and external quality assurance in African Universities:

**BIM for Facility Managers:** Building Information Modeling (BIM) is a tool developed and scaling virtual models of building projects

**Facilities maintenance software**

**Drones for Facility Condition Assessments:** This tool can be used to access/inspect the top of a high roof without spending so much money and time on climbing or scaffolding. It reduces the risk of falling off high structures. It can also serve as aerial surveillance of buildings and other facilities

**Data Gets Even More Mobile:** These tools are used by managers to oversee multiple locations from a specific place using mobile technology with a browser-based facility management system (FMS)

**Facility Optimization with Machine Learning and IoT.** This is having to do with innovative tech and software platforms that enhance asset

performance, connected buildings, and preventive maintenance management. Block chain Buzz is ledger technology used to track activities and actions within a system. This innovative technology can be used to improve contract management, work order processing, payment process, tracking of facilities management, and maintenance needs. It has the capacity to provide an accurate data analysis. Internet-connected devices can be used to generate a dataset for buildings which can be leveraged through machine learning and to unlock innovative ideas into market trends and building performance optimization.

### **Digital Inclusive Instructional Delivery System**

Despite the huge significance of e-tools in teaching and learning in the wake of the digital age, Most African Universities are still plagued with a host of challenges in achieving a digitally inclusive instructional delivery system. However, some state governments are making efforts in providing a technology-driven education system like the Delta State government ably led Dr Senator Ifeanyi Arthur Okowa administration's introduction of the Delta State Learning Management System (DSLMS) which is an innovative solution that enables blended learning across the higher educational Institutions within Delta State. The solution enables students across the Institutions to complete their education curriculum with maximum flexibility. The DSLMS has several solution features like

**Access to content:** with learning no longer confined to the classroom, this LMS allows learners online access to learning materials from anywhere in the world and when its most convenient.

**Staff Management:** with ever-increasing competition and compliance requirements, administrators can use the LMS to gauge teacher-student engagement, learning materials delivered, and the rate of online adoption.

**Student Assessment:** Being an integral part of the conventional learning model, continuous assessments can be planned, published, stored, and tracked on the go both as part of the curriculum and as a test of students' learning experience.

**Information on the go:** With the volume of information out there, students, staff, and management can access information. How accessible is your current information system?

**Virtual classrooms:** It provides a virtual classroom where teachers and students interact in real-time albeit over the internet. Without any physical accommodation and facilities limitations

**Reporting Dashboard:** This provides a high-level view of key metrics across different locations' usage. The analyzed data are displayed on the reporting dashboard using graphs, charts, icons, and legends which enables the extraction of data in multiple formats such as CSV, PDF amongst others.

**Course Management:** DSLMS enables lecturers to handle/manage courses by performing the following actions; updating course information; viewing a list of all courses, course content creation, viewing course information and contents, and tracking learner/student's performance in assessment and assignment.

### **Theoretical Framework**

This study is based on the Technology Acceptance Model propounded by Davis 1989. This theory proposes that system use is a response that can be explained by user motivation which in turn is influenced by an external stimulus of the actual system's features and capabilities. The model suggests that African universities when presented with the choice to integrate digitized technology will be influenced by a number of factors to make their decision about how and when they will use it. When Chief executives of African universities understand what great advantage, they stand to gain by accepting and integrating the digital technologies in their university system, they will put more effort into advocating for its provision and utilization.

### **Methodology**

This study adopted a descriptive survey design. Descriptive design because it deals with what exists, which is related to some preceding event that has influenced or affected a present condition or event (Ofo, 2005). This design is appropriate for the study because it acts as a Scaffold using Administrative Bricks with e-tools for building ICT- proof internal and external quality assurance in African Universities. It is also qualitative in nature because a qualitative review of relevant literature was carried out. Personal observations were carried out.

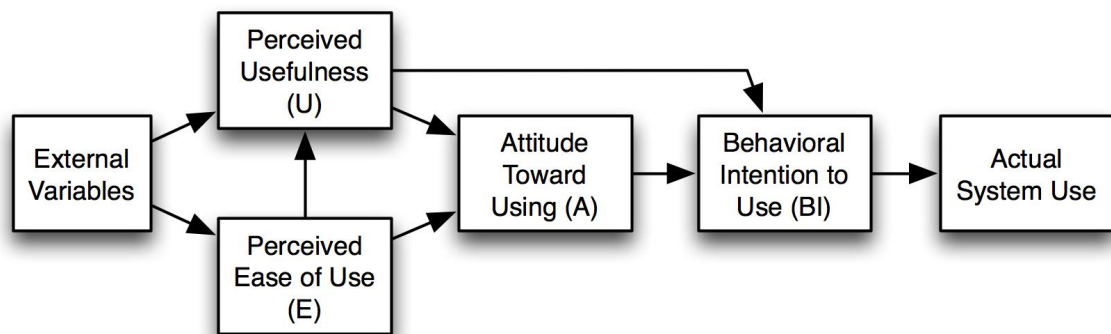
An observation checklist was also used by the researchers to verify how e-tools are used as Scaffolds in Administration to build ICT-proof internal and external quality assurance in the University where the researchers are employed. The observation checklist gave the author the needed structure as a scaffold for guided observation of key elements in the study. Some key stakeholders in the academic planning division of the institution, quality assurance, vice-chancellor's office, Registrar and Bursary

units were observed and a few persons were interviewed. Selection of offices observed and persons interviewed were purposive using the purposive random sampling technique. The observation checklist covered areas of the facilities and digital tools available for use in Scaffolding Administrative Bricks with e-tools for building ICT-proof internal and external quality assurance in African Universities.

### Results

The result from the qualitative study revealed that although some of these technologies are

there, staff and students still harbor fears to adopt and utilize e-tools even though it's still very slow and low in some institutions. Scaffolding these challenges can be eliminated using the Technology Acceptance Model to scaffold Administrative Bricks with e-tools for building ICT- proof internal and external quality assurance in African Universities will. The model suggests that when users are faced with the choice of ICT technology to use, a number of factors influence their decision about how and when they will use it from the diagram



Adopted 14/7/2022

from: [https://commons.wikimedia.org/wiki/File:Technology\\_Acceptance\\_Model.png](https://commons.wikimedia.org/wiki/File:Technology_Acceptance_Model.png)

- Perceived usefulness (PU)- This was defined by Davis as “the degree to which a person believes that using a particular system would enhance his or her job performance” this also includes fears which can be overcome through training, retraining, and constant usage. Monitoring of compliance to ensure usage by the monitoring team until the fear is completely eradicated and some confidence achieved as University staff are encouraged to have a Google mail/institutional mails, upload their research papers online for visibility use the Learning Management System where available or search for an alternative.
- Perceived Ease of Use (E) this explains the degree to which a person believes that using a particular system would be free from effort” Davis, 1989).
- External variable- This refers to taking advantage of the system’s features and capabilities.

### Discussions

In this study, the ability of the chief executives to scaffold administrative policies with e-tools that act as virtual bricks in universities will accelerate both the internal and external quality of African universities. Operating constraints

are reduced and enhancement factors will increase with Bruner idea of “gradually removing your support as the staff masters the new skill or concept”. The administrators/chief executives should remove all support when the staff/ system is fully confident that they can successfully complete a task on their own and have demonstrated as much.

The need for digital inclusiveness in African universities became very obvious during the global pandemic crises. No doubt most of our universities are currently experiencing infrastructural limitations, digital semi-skilled/unskillfulness, inability/fear to embrace digital change, unstable internet facilities, high cost of internet access, low bandwidth or no internet facilities in some geographical areas for staff and students to carry out their researches making it an urgent strategic stride for Chief executives, administrators, heads of the unit to engage the principle of scaffolding by Bruner, W.D & Ross G (1970) who suggest that “reducing the number of steps required to solve a problem by simplifying the task, maintaining the pursuit of the goal, marking critical features between what the staff or student has produced and the ideal solution, controlling frustration and risk in problem-solving and demonstrating an idealized version of the act to be performed” will go a long way to ensuring internal and external quality assurance.

## Conclusion

In conclusion, the need for digitally inclusive African universities cannot be over-emphasized since we have already stepped into the digital millennium. The effective inclusion of e-tools fully scaffolded with administrative bricks is a step in the right direction for African universities to achieve their goals of effective administration of different task areas of both staff, student, instructional and facilities management for internal and external quality assurance. Studies using Technology to structure and Scaffold Real world Experiential Learning in Distance Education have been carried out hence the study to investigate Scaffolding Administrative Bricks with e-tools for building ICT- proof internal and external quality assurance in African Universities.

## Recommendation

It is recommended that Vice-chancellors of universities, quality assurance directors, educational managers, and all categories of leadership in African Universities move with the trends of global development and ensure digital inclusiveness fully scaffold with administrative bricks that will accelerate all-round growth, global academic visibility, reduce paper usage and wastages, save money and eradicate administrative bottlenecks of the African universities.

**Conflict of Interest:** There is no conflict of interest between authors Mormah .F.O and Chiemekwe. S.C. regarding the paper.

**Ethical Statement:** This article does not contain any studies with human participants or animals

**Funding information:** This work is supported by funding from the University of Delta, Agbor. However, the findings, opinions conclusions, and recommendations are basically those of the authors and do not reflect the views of the University.

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