

Levels of Application of Technologies for Educational Management in Nigerian Tertiary Institutions

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ABSTRACT

The educational sector of Nigeria has traditionally been considered very strategic and critical for purposes of development planning and the achievement of sustainable development. Most importantly, educational technology has demonstrated a significant positive effect on achievement. The use of technology as a learning tool can make a measurable positive difference in student achievement, attitudes, and interaction with teachers and other students. Hence, technology can be utilized to improve teaching and learning processes. Integrating technology in learning, especially in tertiary institutions, can empower both instructors and learners to improve the quality of education and also to achieve the anticipated learning objectives.. This paper therefore examined the levels of application of educational technology in tertiary institutions. Using survey research method, the study adopted random sampling technique. The study used a 16-item questionnaire to gather information from 135 respondents drawn from the non-academic staff of one federal and one state tertiary institution in Enugu state. Findings revealed that there is a significant difference between federal and state tertiary institutions in the level of application of technology in education management as well as in the provision of technological infrastructure. The paper therefore concluded that there is need to develop strategic planning whereby the vision of tertiary institutions along with the teaching and learning requirements can be identified and integrated in such strategy. Additionally, the paper recommended that the Nigerian government must recognize the significance of technology in enhancing learning and ensure adequate funding of tertiary institutions.

Keywords: Technology, education, tertiary, management, application.

INTRODUCTION

Education is a powerful tool that opens the door to transformation in several areas. Specifically, education is one of the main keys to development and progress of mankind. In Nigeria, the educational sector has often been considered very strategic and critical for purposes of development planning and the achievement of sustainable development in the long run [1]. The basic importance attributed to education has been premised on the aggregate benefits that are derivable from its appropriate development both in policy and practice. Perhaps the most appealing of these benefits include: the awareness that education is key to the continuous

development of the required human capital for meeting the skill demands of the labor markets and operational needs of work-organizational systems; the realization of the logical connectivity between educational attainment or competency levels and the achievement of labor productivity; and appreciation of the often direct links between education and organizational learning, on the one hand, and the potential for wage/salary increases, on the other hand [2].

Education in Nigeria is primarily the shared responsibility of the federal, state and local governments, however, the federal government is more directly involved with tertiary education. Tertiary

education is widely accepted in Nigeria as a form of investment in human capital development that yields economic benefits and contributes significantly to the nation's future wealth and development by increasing the productive and consumptive capacity of the citizens. Tertiary education equips the individual with relevant knowledge, skills and attitudinal orientation required to progress in one's chosen career in life while contributing meaningfully to the economic growth of the nation. Ironically, tertiary education in Nigeria today is facing myriads of problems with particular reference to effective management. Effective management of the tertiary education entails that the administrators of the tertiary institutions must identify critical issues and harness judiciously available resources towards alleviating them, in this case, through the application of technologies [3]; [4].

The Association for Educational Communications and Technology (AECT) defines educational technology as "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" [5] [6]. Educational Technology can be used by all educators who want to incorporate technology in their teaching as well as educational administrators [7]. Many educators believe that the new computer and communication based technologies have much to offer education and that infusion of technology into school settings will bring profound changes. [8]. Many scholars have also argued that Nigeria and other developing countries need to leverage on e-learning resources to bridge the widening gap in education services. For instance, with 10.5 million children not accessing a primary education in 2010, Nigeria by itself encompasses nearly a fifth of the world's children out of primary school (RESULTS Educational Fund 2013). Thus, despite the growing number of public and private tertiary institutions in the country, a large army of young people

that have been denied access to education continues to mount. A view held by experts, including former UK Prime Minister Gordon Brown, is that technology, especially online and distance learning, is the surest path to increasing literacy. It is generally believed that technology has huge potentials to change both teaching and learning from the traditional way to a more better and enhanced way [9]. Against that backdrop, this paper investigated the levels of application of technologies for educational management in Nigerian tertiary institutions.

Objectives of the Study

- i. To ascertain the dissimilarity in the level of technology usage in federal and state universities in Enugu state for education management.
- ii. To find out the difference between federal and state tertiary institutions in Enugu state in their provision of technological facilities for education management.

Research Questions

- i. What is the level of difference in technology application in federal and state universities in Enugu state for education management?
- ii. What is the difference between federal and state tertiary institutions in Enugu state in their provision of technological facilities for education management?

Research Hypotheses

- i. There is no significant difference in the level of technology application in federal and state universities in Enugu state for education management.
- ii. There is no significant difference between federal and state tertiary institutions in Enugu state in their provision of technological facilities for education management.

LITERATURE REVIEW

Educational technology is considered as the implementation of appropriate tools, techniques, or processes that facilitate the application of senses, memory, and cognition to enhance teaching practices and improve learning outcomes, [10]. [11] stated that many educators perceive technology as a tool for improving the presentation of material for making lessons more fun for the learners and for making administration more efficient. Effective technology use deploys multiple evidence-based strategies concurrently (e.g. adaptive content, frequent testing, immediate feedback, etc.), as do effective teachers (Ross, et al 2010). They further add that using computers or other forms of technology can give students practice on core content and skills while the teacher can work with others, conduct assessments, or perform other tasks. Through the use of educational technology, education is able to be individualized for each student, thus allowing for better differentiation and allowing students to work for mastery at their own pace [12].

Educational technologies improve interactions between students and their instructors. Students can learn more in less time with technology-based instruction and end up liking classes more. Additionally, students develop more positive attitudes and concentrate more. Studies completed on "computer intensive" settings found increases in student-centric, cooperative and higher order learning, writing skills, problem solving, and using technology [13]. Nonetheless, [14] stated that the level of application of ICT in Nigerian tertiary institutions is less than five percent. He explained that majority of the institutions have little or no infrastructure for cyber-centers, computer-equipped classrooms or high speed internet and may not have the funds to implement such infrastructure. According to him, ICT was initially perceived as a way to teach computers, however, educators now view technology as a way of offering teaching content at lower cost and with higher

quality than traditional methods of teaching. In a study by [15], he pointed out that private institutions provide and apply information and communication technology much more than state and federal government tertiary institutions. In the same vein, [16] asserted that academic staff in federal institutions performed better than their counterparts in state institutions owing to the provision of more technological infrastructure.

Schools and tertiary institutions progressively utilize technology, to reduce the costs and improve the efficiency of educational administration. Technology can be used to enrich and deepen skills, helps to relate school experiences to work practices, helps to create economic viability and contributes to radical changes in school, strengthens teaching and provides opportunities for connections between the institution and the world [17]. In schools that leverage on innovative technologies, students are enabled to gain easy access to tools that provide valuable and immediate feedback for literacy enhancement - a development which is currently found to lack full implementation in the Nigerian school system. Therefore, it is expected that modern information and communication technology applications will generally facilitate the achievement of qualitative improvements in the Nigerian educational system, thereby also enhancing quality assurance in educational delivery and achieving better overall education for students. It is further projected that a technology-savvy workforce will also engender growth in Nigeria, including likely improvements in military technology and communications as well as the development of skilled professionals who are sufficiently-equipped to successfully manage technological problems both in Nigeria and internationally [8]. Most educators agree that educational technology can help teachers and students in organization, efficiency, collaboration, communication, extra help, virtual

experiences and so much more. Although, cost, culture and other educational and environmental factors are among the reasons for not adopting Educational Technology by many educational organizations and institutes [11], [12] believe that educational technology has demonstrated a significant positive outcome for all major subject areas, in preschool through higher education, and for both regular education and special needs students. Hence, as students engage more and more frequently with these information-rich technologies, their abilities to identify, evaluate, and use information will become increasingly important to their achievement [6].

In the view of [8], educational technology is still not being applied sufficiently, mostly for the following reasons: lack of school equipment, the necessary resources and insufficient qualification of teachers for the implementation of these technologies. Other challenges identified by various researchers include apathy on the part of some teachers in Nigerian tertiary institutions who are unwilling to accept the new technological advancement. Secondly, the cost of integrating educational technologies in teaching and learning can be expensive, due to the high cost of the ICT equipment and facilities. Thus, some Nigerian tertiary institutions cannot afford to

RESEARCH METHOD

This study adopted the survey research method. The sample population was made up of both senior and junior non-academic staff in the state. Through stratified sampling technique, the sample size of 150 respondents was drawn. Of the 150 persons selected, 135 responses were gathered. Questionnaires were used to collect data for the study. The questionnaires which were used to measure the variables contained only

RESULTS AND DISCUSSION

Table 1 demonstrates the level of technological application for education management in federal and state universities in Enugu state. Accordingly, the mean values indicate that the sum of 3.3 respondents strongly agreed that

procure the necessary ICT facilities due to cost. Conversely, in cases where some tertiary institutions can afford them, they do not see investing huge amount of resources in educational technology as a way to improve teaching and learning. Thus, inadequate funding becomes the bane of our educational development in this regard [12]. In like manner, many teachers do not have access to ICT facilities in Nigerian tertiary institutions. Lack of access to ICT's resources like computers and internet can seriously impede what teachers can do in the classroom as regards implementation of its program [18]. Trailing behind the lack of technological resources is also the lack of adequate computer literacy by both students and teachers. As stated earlier, some teachers are not willing to accept technology in teaching; they prefer to use the old traditional method of teaching. They lack adequate skills to access computer and internet, and this amount to a very big challenge in integrating educational technologies in their teaching. The instability of power supply equally constitutes a challenge to the deployment of technology in the management of education in Nigeria. This is because, not all tertiary institutions can afford power generating sets, talk more of buying the diesel to power on the generators.

closed-ended questions which were mainly likert type of questions. Furthermore, the data gathered were analyzed quantitatively using frequency counts, means and percentages. The benchmark for weighted mean is 3.00. However, each research question has a grand mean of responses from the respondents which determines acceptance or rejection.

there is a significant difference between federal and state tertiary institutions in their provision of technological facilities for management of students' data. Also, the mean sum of 3.4 shows that technology is highly applied in federal

institutions in the management of staff records; 3.3 agreed that this is also the case in the provision of technological infrastructure in order to enhance staff efficiency. However, the mean sum is a little lower (2.7) in the management of financial records. This shows that both state and federal tertiary institutions

largely deploy technology in the management of financial records for effectiveness and better outcome. Thus, there is a significant difference between federal and states tertiary institutions in the level of application of technology for education management.

Table 1: Difference in the level of technology application in federal and state universities in Enugu state for education management. n= 135

S/N	Level of usage	4 SA	3 A	2 SD	1 D	Total	Mean
1	Provision of technological facilities for management efficiency	79 (59%)	30 (22.2%)	9 (6.6%)	17 (12.6%)	135	3.3
2	Management of students' data	84 (62.2%)	25 (18.5%)	12 (8.8%)	14 (10.4%)	135	3.3
3	Management of staff information	88 (65.2%)	24 (17.8%)	18 (13.3%)	5 (3.7%)	135	3.4
4	Management of financial records	57 (42.2%)	13 (9.6%)	39 (28.9%)	26 (19.3%)	135	2.7

Grand Mean = 3.2

In table 2, the mean sum of 2.7 indicates that federal tertiary institutions do not significantly utilize technology in classroom management. Similarly, the sum of 3.3 respondents agreed that technology has been highly deployed in the area of research in federal tertiary institutions than in state institutions, just as a much higher mean value (3.4) shows that the provision of technological facilities and its impact on staff work performance is higher in federal than in state institutions. Lastly, the mean sum of

3.1 can be interpreted to mean that the conduct of examination using technological tools is higher in federal than in state tertiary institutions. The basic reason for this as indicated by the response is scarcity of fund. Consequently, there is a significant difference between federal and state tertiary institutions in their provision of technology for education management in areas such as classroom management, research, general work performance and conducting of examinations.

Table 2: Difference between federal and state tertiary institutions in Enugu state in their provision of technological facilities for education management? n = 135

S/N		4 SA	3 A	2 SD	1 D	Total	Mean
1	Classroom management	42 (31.1%)	37 (27.4%)	36 (26.7%)	20 (14.8%)	135	2.7
2	Research	84 (62.2%)	22 (16.3%)	20 (14.8%)	9 (6.7%)	135	3.3
3	On the whole provision of educational technological facilities and work performance	98 (72.6%)	13 (9.6%)	8 (5.9%)	16 (11.9%)	135	3.4
4	Conducting examination	52 (31.1%)	54 (32.6%)	13 (17%)	16 (19.3%)	135	3.1

Grand Mean = 3.0

CONCLUSION

This study found that there is a significant difference between federal and state tertiary institutions in the application of technology for education management. The study considered areas such as management of financial records, management of staff information, students' data and availability of technology for overall efficiency. Secondly, the study also found that state tertiary institutions especially are not meeting up with expectations in respect to the provision of technological infrastructure in managing education particularly in areas like research, conducting examinations, classroom management and the overall provision of education technological facilities for maximum performance.

Therefore, if tertiary institutions must ensure extensive application of technology in educational management, there is need to develop strategic planning whereby their vision along with

the teaching and learning requirements can be identified and integrated in such strategy. Nigerian government must also recognize the significance of technology in enhancing learning and ensure adequate funding of tertiary institutions with budget specifically for putting educational technologies in place. There is also the need to recognize that technologies are major drivers of worldwide, knowledge-based societies, hence, the functional application of technologies for educational delivery in Nigeria has the high potentials of ideally positively impacting on educational processes and learning. Furthermore, urgent areas of technological application in the educational sector, especially in Nigeria include: the management of schools and tertiary institutions; implementation and actualization of the general and specific functions of teaching, learning and research as well as records management.

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