Technology Driven Management and Employees' Task Accomplishment in Government Technical Colleges in Lagos State, Nigeria

Akeem Adekunle, University of Lagos, Nigeria

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Abstract
The study examined the contributions of Technology-Driven management to employees' task accomplishments with particular reference to Government Technical Colleges in Lagos State Nigeria. The study was guided by one research question and three hypotheses. The descriptive survey research design was used for the study. The population comprised all the 528 teachers in all the five Government Technical Colleges in Lagos state. The sample size consisted of 132 teachers selected using multi-stage sampling procedure. A 25-item validated and reliable (r = 0.96) instrument titled "Technology-Driven Management and Employees' Task Accomplishment Questionnaire" (TDMETAQ) was used for data collection. The analysis of data was carried out using mean and standard deviation to answer the research question, one sample t-test to test hypotheses 1 and 2, and Multiple Regression Analysis for hypothesis 3. The findings indicated that the level of adoption of e-administration in the colleges was low, the provision of ICT infrastructure was low and the capacity building programmes for employees on ICT was inadequate. It was also found out that the adoption of e-administration, provision of ICT infrastructure and capacity building programmes on ICT jointly contributed to employees' task accomplishments. Arising from the findings of the study, it was recommended that as a matter of policy, e-administration should be made an essential component of institutional administration; there should also be adequate provision of Digital facilities in schools as well as regular capacity building programmes on ICT for both administrative and teaching staff in the colleges.

Keywords: Technology-Driven Management, Task Accomplishments, Technical Colleges, e-Administration, ICT facilities and Capacity Building

Introduction

In Nigeria, like other countries all over the world, education has continued to be regarded as the instrument through which the nation's sustainable growth and development can be attained. Yakubu (2020) affirmed that most governments in different parts of the world have consistently placed emphasis on education as an indispensable factor in their efforts towards the achievement of socio-economic, political and technological greatness. The Nigerian educational system is anchored on the five main national goals as contained in the constitution of the country which among others include: the building of a united, strong and self-reliant nation; and a great and dynamic economy, hence, the Federal Republic of Nigeria (FRN) (2014) in the National Policy on Education sees education as a tool that helps in the acquisition of appropriate skills and competences necessary for individuals to live in and contribute to the development of the society. Therefore, education provided by educational institutions should be functional, such that the outputs of the school system can be employable and self- reliant.

The need to equip students with technical skills required of them to be able to fit in different industries, getting prepared to work in business communities, undertake entrepreneurial pursuits and production of skilled craftsmen for the enhancement of national development and promotion of self-reliance has necessitated the establishment of technical Colleges in Nigeria. Technical Colleges are educational institutions offering technical and vocational education and training. The institutions, in addition to general education, provides opportunities for learning in technologies and allied sciences and the possession of applied knowledge, attitudes and proficiency in connection with career in different sectors of productive and social life (FRN, 2014).

According to Odu (as cited in Godiya,2016), Technical Colleges in Nigeria are set up to train artisans for industries and to develop in the people, the appropriate physical, social, cultural and economic proficiencies with the curricular focusing on technical skills, crafts and engineering trade. The courses offered include: painting, auto-mechanic, plumbing, furniture making/ carpentry and joinery, electrical/ electronic technicians, home economics, pharmacy technicians, refrigeration and air conditioning, etc. For Technical Colleges to accomplish the purpose at which they are set up, effective management is highly indispensable. Management has to do with the optimal utilization of human, material, financial and time resources towards the realization of goals and objectives of the organization.

There is no doubt that the management of education generally and technical education in particular is a very complex task and the unprecedented development in technology has brought about a profound advancement in the institutional administrative system in the 21st century. Environmentally friendly technology coupled with adaptability in learning and administrative activities is crucial to the attainment of organizational efficiency, hence, the need for the adoption of technology driven management (Tyagi & Abbi, 2019).

Technology driven management in the context of this study refers to the application of information and communication technology or electronic devices in carrying out management functions in technical Colleges. It also refers to e-management or automated management system. Odedina (2019) noted that the contemporary application of technology in institutional administration is evident in decision making, planning, organizing, communicating, coordinating and performance evaluation. These responsibilities are carried out in the areas of educational programme improvement, instructional quality control, staff

and students' human resources management, guidance and counseling, financial management, plant maintenance and facilities management as well as general school administration. These duties are no doubt very complex, amorphous and extensive. Therefore, the effectiveness and efficiency of institutional management in the contemporary digital generation will to a large extent be hinged on the level at which they are able to rise to the occasion of embracing emerging technological assets and amenities in school administration (Oladipo & Adekunle, 2015).

Information and Communication Technology has brought about a paradigm shift in the methods in which people carry out commercial activities and also transmit information, messages and ideas, and technical colleges and their administrators are no exception. It has radically modernized the patterns of doing business, attitudes to work and social interactions (Mbakem, 2006). Aboderin (2009) however, noted that a large number of the third world countries do not have access to the ICT infrastructure and this has affected the level of utilization of automated devices. In a study carried out by Olayemi and Omotayo (2012), it was reported that there was a low level of awareness on the part of the sampled school administration with regards to ICT usage and that most of the secondary schools in the study area lacked adequate provision of digital facilities. The study further revealed that a significant positive relationship existed between the adoption of ICT and administrative effectiveness of secondary schools.

In a similar study, Jegede and Musa (2020) showed that the effectiveness of technology enhanced system in secondary school administration has been hindered by factors such as insufficient provision of financial backing for ICT education, insufficient ICT infrastructure, haphazard execution of policies on ICT, unstable interest connectivity and coverage as well as low level of literacy in ICT among others, students and school administrators. Toluse (2018) asserted that electronic technology is yet to be suitably incorporated into the teaching-learning process and personal functions in the school system. As observed by Chidobi (2015), some Nigerian schools and Colleges have continued to hold on to the age long system of keeping records in files and lockers thereby exposing them to damage by termites and mice. This has served as obstacles to easy retrieval of these documents when the need arises.

From the foregoing, it can be deduced that the imperativeness of ICT in Nigerian schools and Colleges cannot be under-estimated, especially in this high-tech age where proficiency in ICT is needed to be able to sustain the keenly challenging labour market. Okebiorun (2019) asserted that the accessibility of ICT and its utilization is a distinguished factor in contemporary organisations. This is because technology has developed alongside human development, therefore showing the critical role of employees in the accomplishment of goals of the organisation.

Ayeni and Ogunbameru (2013) evaluated the extent of provision and utilisation of ICT infrastructure towards the realisation of goals of secondary education in Nigeria. The findings revealed that secondary schools are mostly inclined to the use of computer set, printers, and bulletin board, and that there was low association between teachers' and students' utilisation of ICT resources. Maisari, Adikwu, Ogwuche and Ikwuche (2018) in a study to evaluate the proficiency of teachers and principals in the utilisation of digital resources and reported a low-level usage of the resources for the teaching-learning process and administrative functions.

Across the Nigerian secondary schools and Colleges, the facilities for effective operation of technical and vocational Education and training are abysmally deficient, insufficient and outdated. This has without doubt, culminated into the decline in the caliber of graduates of Technical Colleges (Okolie, 2014). Relatedly, Ikoya and Omoyase (as cited in Odedina,2019), reported that about 26% of vocational and technical educational institutions in Nigeria could boast of adequate physical resources. Furthermore, there is evidently a low level of technological development and high-tech enhancement infrastructure. For instance, it is almost unfeasible to access the internet in many schools in the country. The libraries are outdated to the extent that current materials are not easy to come by in the libraries.

The Federal Ministry of Education (2011) conducted a study and reported that a large number of teachers in Nigerian secondary schools and Colleges still had low level of comprehension and expertise in the usage of technology resources for instructional activities, this has been ascribed to factors like inadequate ICT facilities for a large number of teachers and students who require them, other factors include: inappropriate facility support such as epileptic supply of electricity, poor internet connectivity and deficient maintenance culture, especially with regards to ICT infrastructure among others. The implications of these deficiencies are evident in teachers' and administrators' inability to effectively carry out instructional and administrative functions respectively, thereby leading to the production of low-quality graduates by educational institutions.

It therefore, implies that teachers' ability to effectively accomplish their task can be attributed to the extent of integration of ICT in school administration. As noted by the National Council for Accreditation of Teacher Education (NCATE) (2002), teachers are required to demonstrate proficiency in the usage of appropriate teaching methods, educational programme, instructional technology and classroom climate. It is also anticipated that teachers should have in-depth understanding of the sophisticated nature of their learners and have adequate mastery of the subject matter. For the sustenance of outstanding accomplishments, teachers are expected to be kept abreast of the appropriate course of action and exhibit enthusiasm for continuing career development.

Teachers' pedagogical activities in the classroom are extensive and extremely challenging to bring about the expected educational attainment. Thus, the teachers' task accomplishment is demonstrated by convincingly understanding of what to teach, impressive classroom control and adoption of adequate assessment techniques (Begiri, 2014). As part of teachers' tasks, classroom management is a professional activity expected to be adopted by each and every teacher through the exercise of control on recalcitrant attitudes by students so as to guarantee successful educational outcomes. This requires the availability of instructional resources, such as ICT infrastructure aimed at further stimulating and enlisting the consciousness and excitement of the learners in the educational environment (Ukala & Nwabueze, 2015).

Assessment of students' learning is another important task of teachers; hence, it is anticipated that teachers should embrace relevant evaluation procedure in the instructional process and in the assessment of examinations. This task may take too long to be accomplished in the absence of digital equipment in the classroom. Even if the apparatus is made available and the teachers do not possess the technical wherewithal to make use of them, the extent of their service delivery will be hindered. The observation by Etor, Mbon and Ekanem (2020) has shown that teachers in some secondary schools are deficient in the instructional task performance, hence, institutional administrators need to equip teachers with the appropriate technology enhanced equipment and develop their capacity towards the utilisation of the

equipment to enhance effective teaching and learning. The observation further revealed that teachers' job engagement in Nigerian secondary schools is below average due to inadequate knowledge of the application of contemporary technology in carrying out their teaching and allied responsibilities.

Arising from the foregoing, the study examines the technology enhanced management in relation to teachers' task accomplishment with particular reference to Government Technical Colleges in Lagos State Nigeria.

Statement of the Problem

Institutional management is getting more complicated and the adoption of ICT in Nigerian schools is gaining more awareness, especially with the advent of the coronavirus pandemic which has now made the role of school administrator to be more noticeable in ensuring ceaseless learning during the lockdown and school closure as well as in guaranteeing the conduciveness of the school environment for effective teaching and learning. Akinwunmi and Itobore (2020) asserted that the covid-19 crisis has brought about immense threat to the educational system, particularly this time when most school systems were ill-prepared for the electronic learning which probably is the lifeline of education in this emergency situation.

The observation of the researcher has shown that in some of the Nigerian schools and Colleges, the automation of the routine administrative operations seems not to have been accorded due attention as noticeable in the adoption of the conventional system of manual keeping of records and in carrying out other administrative responsibilities. In a large number of schools, the technological enhanced infrastructure appears to be in short supply, even when provided, they are not effectively made use of. Furthermore, the school administrators and teachers who are needed to handle the gadgets seem to be incapable due to their level of incompetence and this is assumed to have implications on the successful utilisation of the facilities in the way and manner to bring about positive outcomes.

It is as a result of the aforementioned that the study examined technological driven management and employees' task accomplishment in Government Technical Colleges in Lagos State, Nigeria.

Purpose of the Study

The study was specifically designed to achieve the following objectives:
1. To investigate the level of adoption of e-administration in Government Technical Colleges, Lagos State.
2. to determine the extent of provision of ICT infrastructure in the Colleges.
3. to examine the adequacy of the capacity building programmes for employees on ICT in the Colleges.
4. to assess the contributions of the adoption of e-administration, provision of ICT infrastructure and capacity building programmes on ICT to employees' task accomplishments in the Colleges.

Research Question

The study provides answer to the question:
How adequate is the capacity building programme on ICT for employees of the Colleges?

Research Hypotheses

The following hypotheses were formulated and tested at .05 level of significance:
Ho1: The level of adoption of e-administration in Government Technical Colleges, Lagos State is not significantly low.
Ho2: The extent of ICT infrastructural provision in the Colleges is not significantly low.
Ho3: There is no significant joint contributions of e-administration, provision of ICT infrastructure and capacity building programmes on ICT to employees' task accomplishment in the Colleges.

Research Methodology

The study adopted a descriptive survey research design because it tried to give a description, explanation and validation of the objectives, research questions and hypotheses of the study. The population comprised all the 528 teachers in all the five Government Technical Colleges in Lagos State as at the time of this study. The sample size consisted of 132 teachers selected using multi-stage sampling procedure. The use of the sampling procedure was premised on the different stages involved in drawing the sample. The first stage was the choice of the Colleges based on division of the state in which they are located using stratified sampling technique. The next state is the selection of teachers in each of the sampled Colleges using random and stratified sampling techniques.

A 25- item instrument titled "Technology-Driven Management and Employees' Task Accomplishment Questionnaire (TAQ) designed by the researcher was used for data collection. The instrument was validated by two academic staff in the Department of Educational Management and one expert in test and measurement, Faculty of Education, University of Lagos Nigeria. The reliability of the instrument was determined in a plot study using split half method. Spearman Brown prophecy formular was used and a reliability co-efficient of 0.96 was obtained. Due to the high level of co-efficient, the instrument was adjudged to be reliable for use in the study. The analysis of data was done using mean and standard deviation to answer the research question, while one sample t – test was used to test hypotheses 1 and 2, and Multiple Regression Analysis for hypothesis 3.

Results

Research Question

How adequate is the capacity building programme on ICT for employees?
This question was answered using mean and standard deviation. The result is presented in table 1.

Table 1: Adequacy of Capacity Building Programme for Employee

S/N	Item	A	NA	Mean	SD
1	There is a clear- cut policy on ICT training for employees in technical colleges	34(25.76)	98(74.24)	2.01	1.03
2	Different ICT training programmes are available for employees in technical colleges	49(37.12)	83(62.88)	1.53	0.61
3	I have attended training on the use of	54(40.91)	78(59.09)	2.34	0.08

	learning management system				
4	I have attended one form of training programme or the other on the use of ICT in the lats two years	57(43.18)	75(56.82)	2.53	1.38
5	The college management provides technology support for employees.	50(37.88)	82(62.12)	1.92	0.16
6	I have the required competence to use ICT for instructional purpose.	73(55.30)	59(49.70)	2.73	0.74
	Average			**2.18**	**0.67**

NOTE: Figures in parentheses are in percentages; Key: A – Applicable, NA – Not applicable

Table 1 shows the participants' responses on the adequacy of the capacity building programme on ICT for employees. The mean responses and standard deviation ranges from 1.53 – 2.73 and 0.08 – 1.38 respectively, with an average mean value of 2.18 less when compared with the criterion mean value of 2.50. This therefore indicates that the Capacity Building Programmes on ICT for Employees of the Lagos state technical colleges were inadequate.

Test of Hypotheses

H01: The level of adoption of e – administration in Lagos state technical colleges is not significantly low.
The hypothesis was tested using one sample t – test and the result of the analysis is presented in table 2.

Table 2: Adoption of e – administration in Government Technical Colleges

N	Mean	SD	Df	t-cal	P	Remarks
132	4.63	.215	131	89.6	.001	Significant

P< 0.05

Table 2 shows the one sample t-test indicating the level of adoption of e-administration in Lagos state Government Technical Colleges. The table shows the t-test calculated value of 89.6, df = 131; P = 0.001<0.05, therefore, the null hypotheses is rejected. It then means that the adoption of e-administration in Lagos state Technical Colleges was significantly low.

H02: The extent of ICT infrastructural provision in Government Technical Colleges is not significantly low.

One sample t-test was used to test the hypothesis, the result is provided in table 3.

Table 3: ICT infrastructural provision in Government Technical College

N	Mean	SD	Df	t-cal	P	Remarks
132	2.52	.103	131	1.4.93	0.002	Significant

P< 0.05

Table 3 shows a one sample t-test indicating the extent of ICT infrastructural provision in Government Technical Colleges. The table shows that the t-cal = 104.93, df = 131, P = 0.002 < 0.05, therefore, the null hypotheses was rejected. It means that ICT infrastructural provision in Government Technical Colleges was significantly low.

H03: There was no significant joint contributions of e-administrations, provision of ICT infrastructure and capacity building programme on ICT to employees' task accomplishment in Government Technical Colleges.

The hypothesis was tested using Multiple Regression Analysis, and the result of the analysis is presented in table 4.

Table 4: e-Administration, Provision of ICT Infrastructure, Capacity Building Programme on ICT and Employees' Task Accomplishment

Model Summary

MODEL	R	R Square	Adjusted R square	Std error estimate
1	.527	.278	.275	.249

a. Predictors: (constant), e-administration, provision of ICT infrastructure and capacity building programme on ICT

ANOVA

MODEL		Sum of square	DF	Mean square	F-ratio	Sig.
1	Residual	42.318	2	21.159	40.226	0.001
	Regression	67.274	128	0.526		
	Total	109.592	131			

a. Dependent variable: Employee's Task Accomplishment

b. Predictors: (constant), e-administration, provision of ICT infrastructure and capacity building programme on ICT.

Table 4 shows that the co-efficient of determination (R square) = 0.278 which gives proportion of variance (R^2 x 100) = 27.8%. This is an indication that the independent variables (e-administration, provision of ICT infrastructure and capacity building programmes on ICT accounted for 27.8% variance in the dependent variable (Employees' Task Accomplishment). This therefore, implies that the joint contributions of the independent variables were significant on employee's task accomplishment, since F – ratio (2, 128) = 40.226; P = .001< 0.05. Thus, the null hypothesis which states that there are no significant joint contributions of e-administration, provision of ICT infrastructure and capacity building on ICT to employees' task accomplishment in Government Technical Colleges was rejected.

Summary of Findings

1. There was low level of adoption of e-management in Lagos State Government Technical Colleges.
2. The provision of ICT infrastructure in the Colleges was low.
3. There were inadequate capacity building programmes on ICT for employees in the Colleges.
4. There were significant joint contributions of e-administration, provision of ICT infrastructure and capacity building programmes on ICT to employee's task accomplishment in the Colleges.

Discussion of Findings

The first result revealed a low level of adoption of e-management in Lagos State Government Technical Colleges. This means that the rate at which technical colleges in Lagos State make use of technology in the day-to-day administrative operation was not encouraging and below average. This finding confirms the earlier one by Adomi and Kpangban (2010) that despite

the series of attempts by the government to incorporate the information and communication technology in the educational system, the extent of adoption and usage of technologies in the teaching-learning process as well as in the administrative practices in Nigerian secondary schools and Colleges had been low as a result of bad policies/ project execution plan and bad information architecture. Similarly, Toyo's (2017) study also corroborates the present study by reporting that the effective utilization of digital infrastructure in colleges had been impeded by factors such as inadequate financial allocation, insufficient expenditure on technological appliances, defective digital literacy among teachers and institutional administration, among others. Also confirming the present finding, Abubakar and Bashir (2021) reported that inspite of a large sum of money invested on ICT facilities and capacity building to enhance school improvement, the adoption of ICT and its utilisation in teaching and learning as well as in school administration has continued to fall behind.

Another finding of the study is that the provision of ICT infrastructure in the Colleges was low. This is an indication that the supply of technology enhanced equipment for teaching and learning as well as in the day-to-day administrative operations in technical Colleges was below expectation as they have been in short supply. The present finding is giving credence to the finding of Godiya and Abana (2017) which justified the imperativeness of information and telecommunication technology's facilities in the promotion of effective teaching learning process and in skill acquisition in technical college. The study further showed that in some of the Nigerian educational institutions, computer is the only electronic technology device that is oftentimes available. Relatedly, the findings of Bawa and Rabiu (2020) supports the finding that the low level of provision and utilisation of electronic devices in the teaching learning process and in administration is evident in the exorbitant ICT appliances, inadequate smart board, erratic supply of power, poor internet connectivity and inadequate financial provision for the maintenance of the few information technology tools at hand.

The result also showed that the capacity building programmes on ICT for employees was inadequate. This suggests that the available in-service training programmes that enhance the skills and proficiency of teachers and school administrators in the effective use of different technology tools and packages are insufficient. Shorunke, Makinde and Makinde (2014) in a study on digital proficiency level of teachers in Lagos State secondary schools found out that effective application of information technology in the school system depends upon proficiency in the usage and retrieval of the needed information without unnecessary pressure. The study further showed that a positive and significant relationship existed between the ICT proficiency level of teachers and the effective usage of information technology facilities and that on the whole, a greater percentage of teachers and school administrators had a fair knowledge of ICT due to their exposure to one form of training programme or the other. Goshet (as cited in Makewa, Mereno, Role and Role, 2013) reported that most schools did not yet offer ICT programme for teachers, students and administrators.

The last result indicated that e-administration, provision of ICT infrastructure and ICT capacity building programmes jointly contributed to employee's task accomplishment. This means that all the technology-driven management variables studied collectively predicted employees' exercise of functions and service delivery. The study supports Kathure's (2015) finding that educators, administrators and learners were unable to benefit from the holistic satisfaction derivable from automation as a result of insufficiency or absence of gadgets. The teachers acknowledged the fact that some measures of encouragement were received from management inform of provision of opportunities for on-the-job ICT training. The study concluded that ICT was used in the management of student-related records, school finances

as well as in the evaluation of students' learning achievement among others; this has without doubt helped in promoting teachers' effective service delivery.

Conclusion

The study has been able to establish the fact that adoption of information technology in the teaching learning process as well as the administration of technical colleges has become imperative, specifically with the Covid-19 pandemic which as necessitated the integration of technology in the school system. Based on the findings of this study, it is evident that technical colleges in Lagos State have not fully integrated information technology in the administration of the institutions as well as in the teaching learning process. Consequently, the ICT infrastructure are in short supply in the Colleges and the very few that are available are poorly maintained, with little technical support provided. The technological skills of teachers and administrators were found to be low, due to the inappropriate training programme available for them which has continued to have implications on their willingness and enthusiasms to use the technological gadgets. Conclusively, the adoption of e-administration, the provision of ICT infrastructure and capacity building programmes for employees jointly contributed to task accomplishment in Lagos State Technical Colleges.

Recommendations

Predicating on the findings of the study and the conclusion deduced there from, the research hereby recommends the following:

The need for a clear-cut ICT implementation policy in all educational institutions in the country. This is to ensure that schools are moving on with the information age. By so doing, ICT culture should be developed in staff and students by putting in place functional ICT implementation committee in all schools.

There should be regular and continuous technical support for teachers and school administrators through the provision of considerable IT proficiency training and retraining programmes, such as in-service training workshop, seminar and conferences as this goes a long way in developing in them the appropriate skills required for the application of technological devices, software and packages.

Since effective application of ICT is to a large extent hinged on adequate provision of facilities, there is therefore, the need for the government to provide adequate ICT infrastructure in schools for teaching and administrative purposes. By so doing, attempt should be made to encourage computer ownership programme for teachers and school administrators by subsidizing the cost of ICT facilities, as this is an essential factor in encouraging personal acquisition of gadgets for personal use and to complement those provided by the government. Therefore, adequate funding of education generally is a panacea in this regard.

The use of technology in both staff and student personnel functions in educational institutions should be fully embraced in order to facilitate tasks accomplishment for staff and improved learning outcomes for students, thus, bringing about the attainment of goals and objectives of vocational and technical education in the country.

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Contact email: adekunleakeemunilag@gmail.com