PRINCIPALS' APPLICATION OF E-LEARNING TECHNOLOGIES AND THE MANAGEMENT OF PUBLIC SENIOR SECONDARY SCHOOLS IN OWERRI EDUCATION ZONES OF IMO STATE, NIGERIA

BY

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ABSTRACT

In this study, the researcher investigated principals' application of e-learning technologies and the management of secondary schools in Owerri Education Zones of Imo State. To achieve purpose of the study, two research questions were asked and two corresponding hypotheses were tested to guide the study. The study adopted the descriptive survey research design. The population of the study is 3,562 which comprise and 124 principals and 3,438 teachers in all the 124 public senior secondary schools in Owerri Education Zones of Imo State. The researcher drew a sample of 360 respondents from 25 selected secondary schools using Taro Yamane formula. Cluster random and proportionate sampling techniques were used to select the schools and respondents. A researcher-made rating scale served as the instrument for the collection of data for this study. The rating scale is titled: Principal's Application of E-learning Technologies and Management of Secondary School Scale which contained 15 items. Three research specialists validated this instrument. A reliability coefficient of 0.80 was obtained using Pearson Product Moment Correlation Coefficients (PPMCC). The research questions were answered using mean scores and standard deviations while the hypotheses were tested using the t-test

statistics at a 0.05 level of significance. The result found that there is a low extent of principals' application of computer in managing secondary schools. The result also found that there is a high extent of principals' application of smartphones in managing secondary schools in Owerri Education Zones, Imo State. Based on the results of the study, it was recommended among others that Government should make adequate funds for provision of computer and internet as well as other logistical support that would strengthen seamless application of e-learning technologies in the management of in public secondary schools in the state.

Keywords: Computer, E-learning technologies, Management, Principals and Smartphones.

Introduction

A principal is the administrative head of the secondary school level. He is the executive head of a secondary school. On appointment, he is vested with authority and responsibility of developing and implementing the education programmes of the school, providing facilities and equipment, keeping school records including records of school funds among others. He is the chief executive who performs staggering range of roles that are enormously complex and multi-tasking functions as well as provides instructional leadership by coordinating curricula, co-curricular programs and is responsible for the general administration of the secondary school. According to Akinola (2011), principals are change agents and as such remain current with the new trends in classroom activities. Botha (2014) opines that a school principal is the educational leader and manager of a school, and is therefore responsible for the work performance of all the people in the school both staff and learners. The principal performs lots of statutory functions including the management of schools.

Management is the process of making strategic plans, setting organizational objectives, making resources available and deploying people and finances to achieve set objectives and measure results. Ezeugbor (2017) asserts that to function optimally in his/her management position, the school principal coordinates all the resources of an organization through the process of planning, organizing, directing and control, in order to attain organizational goals. Management is the utilization of physical and human resources through cooperative efforts and it is accomplished by performing the several administrative functions. Manafa (2019) opines that educational management is the utilization of physical and human resources through cooperative efforts and it is accomplished by performing the administrative functions such as students and staff personnel management, curriculum implementation, school plant management, fostering relationship between the school and the community amongst others. Given the above definitions, management therefore involves, providing various modalities or setting strategies in order to put things into working order for achievement of educational goals and objectives. To seamlessly manage the schools in this era of ICT, the principal requires the use of e-learning technologies.

E-learning technologies may be referred to as man-made devices created to aid teaching and learning. Oku and Diala (2020) assert that e-learning technologies are indispensable aspects that have made the educational systems to rethink their roles, teaching and vision for the future. According to Usman and Igbozuruike (2019) e-learning stands for electronic learning, which simply means learning mediated by electronic technology. Most countries of the world have moved on with life and educational activities using electronic technologies. In education, e-learning technologies have proven to be helpful during emergencies. E-learning may be referred

to as a modern way of knowledge transmission of information through electronic devices within the context of education. Uzochukwu and Nzokurum (2022) assert that the use of modern technologies in enhancing delivery of education is increasingly becoming a common phenomenon in educational institutions in developing countries.

E-learning technologies is all kinds of electronic devices, media or technology such as radio, telephony, satellite broadcast, computers, the internet others devices that have assisted in different ways to enhance teaching and learning. In e-learning particularly, there are useful electronic components that can be used and managed to conduct school management activities remotely during emergencies and some of them include desktop computer, multimedia projector, internet, Webinar Zoom Meet among others. Nwaosa and Okolocha (2023) on the other hand assert that the e-learning tools include computer hardware, software applications among others. Also, e-learning tools used in this study include: mobile phones, internet, video/audio podcasts, facebook, videoconferencing, Webinar Zoom Meet, and multimedia/digital projector. Thus, computers and smartphones are some of the e-learning technologies to be discussed in this study.

Computers are electronic gadget used in offices, schools, churches and some other places. It is a programmed electronic gadget that performs mathematical calculations and logical operations, especially one that can process, store and retrieve large amount of data very quickly; now especially, a small one for personal or home use employed for manipulating text or graphics, accessing the internet or playing games or media. Ahmad and Danjuma (2022) opine that a computer is an electronic gadget, operating under the control of instructions stored in its own memory. The computer is capable of accepting data (input), processing data arithmetically and logically, producing output from the processed data and storing the results for future use. Most computers that sit on a desk or the lap are called Personal Computers (PCs). People use computers in many ways; tracking of inventories with bar codes and scanners, check the credit status of customers, and transfer funds electronically. Empirically, Ezenwafor and Nwachukwu (2020) revealed that principals rarely utilize e-learning resources for management of schools. In the same vein, Toryuha, Ajala and Mbakeren (2020) found that not many school have available e-learning resources and even the ones that have them do suffer from one challenge of poor or no network, epileptic power supply, no or poor manpower, etc. Also, it was revealed that accessing the available e-learning resources was not a challenge to the principals but there were no furnished computer laboratories and that not all principals have personal laptops but all the principals had their smartphones.

Smartphone is as a mobile phone with combination of computer functions, cell-phone features and other capabilities, including operating system, internet accessibility functionalities, and application software for performance of different tasks in various endeavours. Alzougool and Almansour (2017) define smartphone as an advanced mobile device furnished with comparable computer functions such as perfect operating system (like Android and Apple's IOS), fashioned with standardized interactive interface and capable of accepting third-party applications such as Zoom, Skype and WhatsApp. Frankenfield (2022) opines that smartphone is a handheld communication facility that helps the user to connect to mobile network, thereby allowing such a user to make voice calls, video calls, send text messages and surf the internet, etc. Kibona and Mgaya (2015) observe that smartphones have made it possible for school principals to coordinate the schools' activities remotely, seamlessly and independently thereby ensuring

effectiveness in the management of schools. In other words, principals can also use smartphone to converse with school bursar and accountant through video-call or chats, to be abreast with school financial matters and performance of school budget. School leaders can also use smartphone to track students' details pertaining to subject registrations, payments of examinations levies, students counselling and support services online or in-person. During free time, school principal can also access students' online forum to observe and interact with them to obtain first-hand information about their views concerning teaching and learning activities while the pandemic endures. Such downward information will help the school management to identify areas of challenge in order to make improvement to ensure that instructors administer instruction effectively, resulting in improved learning experiences for both teachers and students (Masiu & Chukwuere, 2018). Empirically, Ikwuka, Ofodile, Igbokwe, Udenwa, Okoye, and Oguejiofor (2021) found that many of the principals utilized e-learning resources such as smartphones for research purposes and evaluation purposes.

It is noteworthy to state that there are remarkable benefits of e-learning technologies. It is generally observed that most secondary school principals are illiterates in the use of e-learning technologies. This problem seems to be one of the factors that undermine the management of secondary schools. For instance, most of the schools' statutory records that are to be kept digitally are rather stored manually. The admission of students that ought to be processed electronically are rather handled using the conventional method which could be partly due to lack of innovative technologies applied by the school principals. Although several attempt such as provision of e-learning technologies and periodic training and re-training of school administrators have been established by the state government to ease effective utilization of these technologies, yet some principals seem to find it difficult to apply them while discharging their administrative duties. In spite of the enormous advantages of e-learning technologies utilization in the secondary school system especially in the areas of secondary school management, the problem of not being technologically compliant keep persisting, thereby making it difficult if not impossible for the school to meet up with the 21st century educational trends. However, this problem is therefore posed as in a question form; what is the level of principals' application of e-learning technologies on the management of public senior secondary schools in Owerri Education Zones of Imo State? Providing answer to the above asked question becomes the thrust of this study.

Purpose of the Study

The general purpose of the study is to investigate principals' application of e-learning technologies and the management of secondary schools in Owerri Education Zones of Imo State. The specific objectives include to:

1.   ascertain the extent of principals' application of computer in the management of secondary schools, and

2.   examine the extent of principals' application of smart phones in the management of secondary schools.

Research Questions

The following research questions were posed to guide the study;

1. What is the extent of principals' application of computer on the management of secondary schools?

2. What is the extent of principals' application of smartphones on the management of secondary schools?

Hypotheses

The following null hypotheses were formulated and tested at a 0.05 level of significance;

Ho_1: There is no significant difference between the mean rating score of principals and teachers on the extent of principals' application of computer in the management of secondary schools.

Ho_4: There is no significant difference between the mean rating score of principals and teachers on the extent of principals' application of smartphones in the management of secondary schools.

Method

The study adopted the descriptive survey research design. The choice of this design is to enable the researcher analyze and report data without manipulation or distortion of any of the variables. Nworgu (2015) opines that descriptive survey design is used in preliminary and exploratory studies to allow researchers gather, summarize, present and interpret information for the purpose of clarification. Hence, the design helped the researcher to collect data on this issue through an instrument and the data collected were analyzed with inferential statistical tools. The population of the study is 3,562 which comprise and 124 principals and 3,438 teachers in all the 124 public senior secondary schools in Owerri Education Zones I & II of Imo State. The researcher drew a sample of 360 respondents (25 principals and 335 teachers) from 25 selected secondary schools. The sample size was determined using Taro Yamane formula. Cluster random and simple sampling techniques were used to select the schools and respondents. The researcher clustered the respondents into various groups in order to ensure that everyone was represented. The simple random sampling was used to select the required number of schools to ensure equal representation of the schools.

A researcher-made rating scale served as the instrument for the collection of data for this study. The rating scale is titled: Principal's Application of E-learning Technologies and Management of Secondary School Scale (PAETMSSS) which contained 15 items and was used to measure the extent of principals' application of e-learning technologies in managing the affairs of secondary schools. The scale was rated using the 4-point rating type scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE). These rating responses represent 4 points, 3 points, 2 points and 1 point respectively. The instrument was validated by three research specialists in order to ensure that the contents of the instrument were in line with the purpose of the study, research questions and hypotheses. Reliability coefficient of 0.80 was obtained using Pearson Product Moment Correlation Coefficients (PPMCC). The

researcher analyzed the data using the mean scores and standard deviations for the research questions. The hypotheses were tested using the t-test statistics at a 0.05 level of significance.

Result

Research Question One: What is the extent of principals' application of computer on the management of secondary schools?

Table 1: Mean ratings of principals and teachers on the extent of principals' application of computer on the management of secondary schools.

S/N	Item	Principals N = 25			Teachers N = 335		
	Principals' application of computer in managing secondary schools include;	$\bar{X}$	**SD**	**Remark**	$\bar{X}$	**SD**	**Decision**
1	Inputting information in the computer system through the keyboard	2.32	0.85	Low Extent	1.93	0.80	Low Extent
2	Using the light pen to input information into the computer system.	1.92	0.91	Low Extent	1.98	0.80	Low Extent
3	Using the scanner to process information into the computer	2.16	0.69	Low Extent	1.97	0.72	Low Extent
4	Assessing information with the computer touchpad	1.96	0.89	Low Extent	1.87	0.81	Low Extent
5	Locating documents on the computer	3.00	0.91	High Extent	2.95	0.88	High Extent
6	Using the Universal Serial Bus (USB) to receive and transfer office information	1.96	0.84	Low Extent	2.11	0.76	Low Extent
7	Using screen resolution of the Video Display Unit (VDU) to adjust computer monitor	2.16	0.94	Low Extent	1.91	0.77	Low Extent
	Expected Mean	**15.48**		**Low Extent**	**14.72**		**Low Extent**
	Obtained Mean	**17.50**			**17.50**		

Table 1 showed the mean ratings of principals and teachers on the extent of principals' application of computer on the management of secondary schools. The results indicated that items 1, 2, 3, 4, 6, 7 and 8 recorded mean scores below the criterion mean score of 2.50, while only item 5 had mean score above the criterion mean score of 2.50. The analysis was buttressed with the grand mean scores of 15.48 for principals and 14.72 for teachers. The result concluded that there is a low extent of principals' application of computer on the management of secondary schools in Owerri Education Zones, Imo State.

Hypothesis One:
Ho₁: There is no significant difference between the mean rating score of principals and teachers on the extent of principals' application of computer in the management of secondary schools.

Table 2: t-test of significant difference between the mean rating score of principals and teachers on the extent of principals' application of computer in the management of secondary schools

Respondents	n	$\bar{X}$	S.D	df	t-cal	t-tab	Decision
Principals	25	15.48	2.15				
Teachers	335	14.72	2.31	358	0.561	1.96	Accept Ho

Table 2 gave the grand mean score and standard deviations of 25 principals as 15.48 and 2.15 respectively, while that of the mean scores and standard deviations of 335 teachers stood at 14.72 and 2.31 respectively. At 358 degree of freedom, with application of the t-test calculated, its result of 0.561 is less than the t-tabulated at 5% level of significance, the decision is to accept the null hypothesis and conclude that there is no significant difference between the mean rating score of principals and teachers on the extent of principals' application of computer in the management of secondary schools in Owerri Education Zones, Imo State.

Research Question Two: What is the extent of principals' application of smartphones on the management of secondary schools?

Table 3: Mean ratings of principals and teachers on the extent of principals' application of smartphones on the management of secondary schools.

S/N	Item	Principals N = 25			Teachers N = 335		
	Principals' application of smartphones in managing secondary schools include;	$\bar{X}$	SD	Remark	$\bar{X}$	SD	Decision
8	acquiring of information about new development in education	2.88	0.93	High Extent	2.81	0.84	High Extent
9	communicating with the school bursar to be abreast with school financial matters and performance of school budget	3.08	0.86	High Extent	3.08	0.81	High Extent
10	tracking of students' details pertaining to subject registrations	3.00	0.87	High Extent	2.88	0.83	High Extent
11	posting of class timetable so that all students, respective teachers and ancillary staff can be properly informed	3.12	0.78	High Extent	2.89	0.84	High Extent
12	Using smartphones to exercise their professional obligations and responsibilities in new and appropriate ways	3.08	0.86	High Extent	3.07	0.91	High Extent
13	organizing students' online forum to observe and interact with them to obtain first-hand information about their academic progression	2.84	0.90	High Extent	2.84	0.90	High Extent
14	scheduling of tasks and meetings to enhance personal effectiveness and work performance efficiency	2.84	0.75	High Extent	3.10	0.91	High Extent
15	saving of school files in their smartphone storage for future use.	3.24	0.83	High Extent	3.06	0.90	High Extent
	Expected Mean	**24.08**		**High Extent**	**23.73**		**High Extent**
	Obtained Mean	**20.00**			**20.00**		

Table 3 showed the mean ratings of principals and teachers on the extent of principals' application of smartphones on the management of secondary schools. The results indicated that

items 8, 9, 10, 11, 12, 13, 14 and 15 recorded mean scores above the criterion mean score of 2.50. The analysis was buttressed with the grand mean scores of 24.08 for principals and 23.73 for teachers. The result concluded that there is a high extent of principals' application of smartphones on the management of secondary schools in Owerri Education Zones, Imo State.

Hypothesis Two:
Ho$_2$: There is no significant difference between the mean rating score of principals and teachers on the extent of principals' application of smartphones in the management of secondary schools.

Table 4: t-test of significant difference between the mean rating score of principals and teachers on the extent of principals' application of smartphones in the management of secondary schools

Respondents	n	$\overline{X}$	S.D	df	t-cal	t-tab	Decision
Principals	25	24.08	2.087				
Teachers	335	23.73	2.152	358	0.511	1.96	Accept Ho

Table 4 gave the grand mean score and standard deviations of 25 principals as 24.08 and 2.087 respectively, while that of the mean scores and standard deviations of 335 teachers stood at 23.73 and 2.152 respectively. At 358 degree of freedom, with application of the t-test calculated, its result of 0.511 is less than the t-tabulated at 5% level of significance, the decision is to accept the null hypothesis and conclude that there is no significant difference between the mean rating score of principals and teachers on the extent of principals' application of smartphones in the management of secondary schools in Owerri Education Zones, Imo State.

Discussion of Findings

The result showed that there is a low application of computer by principals on the management of secondary schools in Owerri Education Zones, Imo State. The low extent is an indication that the principals do not use computer and its features such as keyboard, touchpad, light pen, scanner among others to carry out administrative tasks necessary for the management of public secondary schools. This could be a reason why there has been record of poor management of secondary schools. The findings of the study further established that there is no significant difference between the mean rating score of principals and teachers on the extent of principals' application of computer in the management of secondary schools. In agreement to these findings, Ezenwafor and Nwachukwu (2020) revealed that principals rarely utilize e-learning resources for management of schools. In the same vein, Toryuha, Ajala and Mbakeren (2020) found that not many school have available e-learning resources and even the ones that have them do suffer from one challenge of poor or no network, epileptic power supply, no or poor manpower, etc. Also, it was revealed that accessing the available e-learning resources was not a challenge to the principals but there were no furnished computer laboratories and that not all principals have personal laptops, among other findings. The findings therefore strengthened the fact that principals' low application of computer is attributed to lack of computer facilities in the school which have contributed to poor management of schools in Owerri Education Zones, Imo State as the conventional style of management still persists making it difficult for principals to tap into the benefits of technology.

It was also revealed in the findings of this study that there is a high extent of principals' application of smartphones on the management of secondary schools in Owerri Education Zones, Imo State. The high extent recorded was attributed to principals' ability to acquire information about new development in education, communicate with the school bursar to be abreast with school financial matters and performance of school budget, track of students' details pertaining to subject registrations, save school files in their smartphone storage for future use and to schedule tasks and meetings to enhance personal effectiveness and work performance efficiency. The findings of the study further established that there is no significant difference between the mean rating score of principals and teachers on the extent of principals' application of smartphones in the management of secondary schools. Corroborating the result, Ikwuka, Ofodile, Igbokwe, Udenwa, Okoye, and Oguejiofor (2021) found that many of the principals utilized e-learning resources such as smartphones for research purposes and evaluation purposes. The findings therefore strengthened the fact that principals' application of smartphones in managing secondary schools has helped to ensure that their duties are carried out seamlessly as they can stay in the comfort of their offices and communicate with school board and their counterparts in other schools to obtain information about new development and trends in education.

Conclusion

E-learning technology is a 21st century initiative with the aim of solving seemingly difficult tasks in a split of seconds. It was also created to reduce workload and time wastage in the performance of tasks in organizations. The findings of this study indicated that there is a low application of computer by principals in managing secondary schools. This implies that the conventional style of management still persist which makes it difficult for principals to tap into the benefits of technology. Also, principals' application of smarphones in managing secondary school recorded a high extent which implies that the principals can carry out their duties seamlessly as they can stay in the comfort of their offices and communicate with school board and their counterparts in other schools to obtain information about new development and trends in education. In conclusion, e-learning technologies such as computer and smartphones when applied by the principals are indispensable especially in this era of technology in order to effectively manage secondary schools and achieve their predetermined goals and objectives.

Recommendations

Based on the findings in this study, the researcher made the following recommendations:

1.   Government should make adequate funds for provision of computer and internet as well as other logistical support that would strengthen seamless application of e-learning technologies in the management of in public secondary schools in the state. Also, the government through the efforts of the Ministry of Education should always organize conferences and workshops for principals in order to ensure that they are technological complaints to improve the application of e-learning technologies in managing the schools.

2.   Principals should ensure that their smartphones are used mainly for the purpose of education especially during school hours in order to utilize and achieve the benefits attached to smartphones usage in the management of schools.

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