ICT ADOPTION PRACTICES AND SUSTAINABILITY OF PRIVATE SECONDARY SCHOOLS IN CROSS RIVER STATE, NIGERIA

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Abstract

This study examined ICT adoption practices and sustainability of private secondary schools in Cross River State, Nigeria. The research design adopted for the study was survey research design. One research question and one research hypothesis were formulated to guide the study. Purposive sampling technique was used to sample 105 private secondary school proprietors in 2022/2023 academic year in Calabar Education Zone. The instrument used for the study was a 24 item modified 4-point Likert-type questionnaire called ICT Adoption Practices and Sustainability of Private Secondary Schools Questionnaire (IAPSPSSQ).The reliability estimate of the instrument was established through the Cronbach Co-efficient Alpha Reliability methods. Data were analyzed using One-way analysis of variance (ANOVA). The major finding of the study revealed that ICT adoption practices has a significance influence on sustainability of private secondary schools in terms of learning environment, effective teaching and curriculum content. Based on the findings, it was recommended among others that in-service training should be conducted regularly by private school proprietors to acquaint teachers with recent innovations in management and ICT facilities available for teaching and learning.

Key words: ICT, Adoption Practices, Sustainability, Private Secondary Schools.

Introduction

Information communication technologies (ICTs) are information handling tools that are used to produce, store, and process, distribute and exchange information. These different tools are now able to work together, and combine to form networked world which reaches into every corner of the globe. It is an increasingly powerful tool for participating in global markets, promoting political accountability; improving the delivery of basic services; and enhancing local development opportunities (Toyo, 2017). ICT "is an electronic based system of information transmission, reception, processing and retrieval, which has drastically changed the way we think, the way we live and the environment in which we live". It can be used to access global knowledge and communication with other people (Ogunsola, 2020).

The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning, and research. A great deal of research has proven the benefits to the quality of education. ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workforce, as well as strengthening teaching and helping schools change (Yusuf, 2005). In a rapidly changing world, basic education is essential for an individual to be able to access and apply information. Such ability must include ICTs in the global village. The Economic Commission for Africa has indicated that the ability to access and use information is no longer a luxury, but a necessity for development. Unfortunately, many developing countries, especially in Africa, are still low in ICT application and use (Adigun & Akinbinu, 2017).

Ownership of educational institutions in Nigeria is between the public and private sectors. The public sector here refers to government at the three tiers (Federal, State and Local Government). While the private sector refers to an individual, or group of persons, organizations or mission bodies coming together to establish

and run an educational institution at any level of the educational system namely, nursery, primary, secondary, and or colleges of education, polytechnics and universities among others. Schools that are established and run by governments are called public schools while those established by individuals, organizations and mission bodies are referred to as private schools. Consequently, according to Omotoso (2018) private schools are those schools that have the following characteristics:

i. Supported by private organization or individuals rather than by the state
ii. Independent schools that are supported wholly by the payment of fees
iii. Schools that are not administered by local, state or federal governments
iv. They are schools that retain the right to select their students
v. They are schools that do not rely on mandatory taxation through public or government funding.

According to Ayeni (2021) the continuity or sustainability of private school entails continuous adoption of ICT practices, constant school enrolment, maintenance of school plants, maintenance of staff and effective teaching etc. As any obstruction in this area can mean that the school is gradually coming to a closure or breakdown. However, private schools are constantly confronted with the problem of sustainability in terms of learning environment, effective teaching and curriculum content. Sustainability on the other hand, is the continuous existence of a firm or business as stated by Olumide (2014). The sustainability of private secondary school is very important as it makes meaningful contributions to the growth of the Nigerian economy, and the continuous existence of private secondary schools help to ensure continuous partnership with the public and private in the provision of qualitative education to all citizens.

Learning environment refer to the environment, facilities as well as the arrangement of such facilities within the school environment (Adekunle, 2012). School facilities decay from time to time due to the destructive nature of students and lack of maintenance culture by proprietors in Cross River State. Failure to replace or maintain such facilities will mean the extinction of learning facilities for students in the near future. The school environment of private secondary schools also needs to be constantly improved, as the environment can grow old and decay over time, without constant maintenance. When this happens, parents will begin to withdraw their wards because no parent wants their children to remain in a school without conducive learning environment.

Effective teaching refers to the ability of the school to cover both academic and non-academic aspects of the curriculum with evidence seen in the change of attitude of the students who attend the school. This aspect of school sustainability is relevant because parents will not want to spend money on their children without getting what they are spending money for as every parent expects that the school should be very effective in teaching as that is what they are paying for. Parents will therefore gradually remove their children from the school if they find out that the school is not thorough enough in their teaching, thereby leading to the closure of such schools.

Curriculum content implementation is very important in the sustainability and continuity of private secondary schools in Cross River State because, for a school to continue to exist such school must be able to achieve the purpose of existence which is basically embedded in its curriculum. The curriculum contains detailed information about everything that is expected to be taught in the school including extra-curricular activities. The school is therefore expected to cover everything that is written or documented in the school curriculum. However, for curriculum implementation to be very effective there has to be effective communication and ICT adoption practices.

The need for ICT in Cross River State private secondary schools cannot be overemphasized, in this technology-driven age, everyone requires ICT competence to survive. Organizations are finding it very

necessary to train and re-train their employees to establish or increase their knowledge of computers and other ICT facilities (Mohammad & Hashim, 2018). This calls for early acquisition of ICT skills by students and school management.

There are developments in the Nigerian education sector which indicate some level of ICT application in the secondary schools. The Federal Government of Nigeria, in the National Policy on Education (Federal Republic of Nigeria, 2013), recognizes the prominent role of ICTs in the modern world, and has integrated ICTs into education in Nigeria. To actualize this goal, the document states that government will provide basic infrastructures and training at the primary school. At the junior secondary school, computer education has been made a pre-vocational elective, and is a vocational elective at the senior secondary school. It is also the intention of government to provide necessary infrastructures and training for the integration of ICTs in the secondary school system. It should be noted that 2004 was not the first attempt the Nigerian government made to introduce computer education in schools. In 1988, the Nigerian government enacted a policy on computer education. The plan was to establish pilot schools and diffuse computer education innovation first to all secondary schools, and then to primary schools. Unfortunately, the project did not really take off beyond the distribution and installation of personal computers (Aduwa-Ogiegbaen & Iyamu, 2005).

ICTs are important in the sustainability of private secondary schools because Students who use ICTs gain deeper understanding of complex topics and concepts and are more likely to recall information and use it to solve problems outside the classroom. In addition, through ICT, students extend and deepen their knowledge, investigation, and inquiry according to their needs and interest when access to information is available on multiple levels (Apple Computer, 2021).
Information communication technology (ICT) has no doubt changed the face of teaching and learning globally. And serious nations are taking the advantages inherent in ICT to impact on the educational sector. Though Nigeria is also making efforts to join the ICT fray, these efforts appear to be ineffective. Computer laboratories are largely non-existent in many private secondary schools across the country. And where they exist, they are nothing to cheer. Due to this general neglect and other factors, comprising corruption, outdated curriculum, ill-motivated teachers, materialism and academic laziness on the part of Students and Teachers, the nation has been reaping mass failure in public examinations. Arising from this, stakeholders are calling on government to provide basic facilities including ICT-driven teaching aids for the nation's educational system (Toyo, 2018).

Thomas (2017), posited that ICT innovations and skills can contribute significantly to the effective management and sustainability of private secondary schools in Nigeria. He noted that it is not uncommon to find that many establishments in Nigeria, including educational institutions, still keep records in files and tucked them away in filling cabinets where they accumulate dust. Many of these files are often eaten up by rodents and cockroaches thus rendering them irretrievable. A great deal of routine administrative work in government establishment is still done manually with the state and the Federal government showing little or no interest in embracing ICT. The official administrative drudgery in government offices and education institutions can be better managed through ICT. Educational administrative functions include a wide variety of activities such as educational governance, supervision, support services, infrastructure, finance, budgeting, accounting, personnel selection and training system monitoring and evaluation, facilities procurement and management, equipment maintenance, research, and so on.

In most Nigerian schools, officials still go through the laborious exercise of manually registering students, maintaining records of pupil, performance, keeping inventory list of supplies, doing cost accounting, paying bills, printing reports and drawing architectural designs. The huge man-hour spend on these exercises can be drastically reduced with ICT to enhance overall management procedure. Thomas (2017), said that "Computer bring great speed and accuracy to each of these tasks, along with the convenience of storing large

quantities of information on 'small disks or tapes. The prevailing condition in school management in Nigeria is disheartening and discouraging. The country seems to be living in prehistoric times in the educational management while even developing countries in Africa such as South Africa, Kenya, Uganda and Tanzania are far ahead of Nigeria in ICT applications. Despite its huge material resources and population endowment, Nigeria cannot be counted among progressive nations using ICT in educational management, as technology has become a critical tool for achieving success in education.

Generally, adoption of ICT is in different phases, some are in the embryonic stage while some schools have successfully incorporated ICT into their curriculum for both privately or publicly funded secondary schools in Nigeria. A survey on ICT adoption on education in Nigeria and Cross River State in particular showed that most research is on the tertiary education and very little on secondary education. The adoption and use of ICT in private secondary schools have a positive impact on teaching, learning, and research and enrolment (Opeyemi, Sheila, Hilary, Peter & Anuoluwapo, 2016). Despite the role ICT plays in education, secondary schools in Cross River State and Nigeria as a whole are yet to extensively adopt them for administration, teaching and learning. Efforts geared towards integration of ICT into the secondary school administration system, have not had much impact. Problems such as poor policy and project implementation strategies and poor information infrastructure militate against these efforts. (Eyong, 2017).

While the problem of lack of sustainability of private secondary schools greatly depends on learning environment, effectiveness of teaching and curriculum implementation, these variables are further influenced by ICT practices adopted by private schools. This ugly situation has led to closure of many private secondary schools in Cross River State, as it is observed that some of the private secondary schools established in the State are closed down after few years of its existence and this closure is sometimes as a result of poor learning environment, ineffective teaching, and poor curriculum implementation. The problem of the study is therefore posed, How does ICT adoption practices influence sustainability of private secondary schools in Calabar Education Zone in terms of learning environment, effective teaching and curriculum content?

Methodology

The research design adopted in conducting this study was the survey research design. Purposive sampling technique was used to sample 105 private secondary school proprietors in 2022/2023 school session in Calabar Education Zone of Cross River State, Nigeria. Data were collected through a 24 item modified Likert-type questionnaire called ICT Adoption Practices and Sustainability of Private Secondary Schools Questionnaire (IAPSPSSQ). The questionnaire was divided into three sections (A, B and C). Section A collected demographic information such as Name of School, Proprietor's working experience, Sex, Age etc. while section B elicited information on ICT adoption practices which consisted six items and section C was on the three component of sustainability of private secondary schools, namely: Learning environment, Effective teaching and Curriculum. Six items were generated for each of the components, which amounted to18 items. The items were presented in form of statements and presented in form of questions for school Proprietors to indicate their level of articulation. The extent of these articulations ranged from Strongly Agree (4-points), Agree (3-points), Disagree (2-points) and Strongly Disagree (1-point). Thus it was made up of modified four points likert scale. The items were tested for internal consistency and Cronbach Alpha Coefficient of .89 was obtained and accepted as showing acceptable level of consistency.

Results

The results derived from the analyzed data are presented in this section. Answers are also provided to research question.

HO: There is no significant influence of ICT adoption practices on sustainability of private secondary schools in terms of learning environment, effective teaching and curriculum content. The independent variable in the hypothesis is ICT adoption practices categorize as (Low, Moderate and High) while the dependent variable is sustainability of private secondary schools with its three dimensions (learning environment, effective teaching and curriculum content). One-way Analysis of Variance (ANOVA) was employed to test the hypothesis. The result of the analysis is presented in Table 1.

The upper part of the table showed the mean and standard deviation of the variables in the hypothesis, while the lower part of the table showed the actual ANOVA table results. These results showed the calculated F-value of 6.36, 9.31, 4.93 and 8.42 for learning environment, effective teaching, curriculum content and overall sustainability respectively and the critical F-value of 3.09 at .05 level of significance with 2 and 102 degrees of freedoom. From the analysis, the calculated F-value for learning environment, effective teaching, curriculum content and overall sustainability are respectively higher than the critical F-value. Based on this, the null hypothesis which states that there is no significant influence of ICT adoption practices on sustainability of private secondary schools in terms of learning environment, effective teaching and curriculum content was rejected. With this results ,this means there is a significant influence of ICT adoption practices on sustainability of private secondary schools in terms of learning environment, effective teaching and curriculum. Because the F-values were significant, a Bonferroni post hoc test was conducted to determine the direction of the significance and the result is presented in Table 2.

Table 1

Summary of One-way Analysis of Variance (ANOVA) of the influence of ICT adoption practices on sustainability of private secondary schools

Sub variables	Group	ICT adoption practices	N	Mean	SD
Learning Environment		Low	29	16.55	4.06
		Moderate	38	19.79	3.74
		High	38	18.16	3.54
	Total		105	18.30	3.89
Effective Teaching		Low	29	16.93	3.45
		Moderate	38	19.58	1.77
		High	38	19.34	2.74
	Total		105	18.76	2.90
Curriculum content		Low	29	18.82	2.83
		Moderate	38	17.87	4.44
		High	38	18.73	3.54
	Total		105	18.30	3.88
Overal Sustainability		Low	29	51.21	6.32
		Moderate	38	56.89	5.94
		High	38	56.39	6.07
	Total		105	55.14	6.51

Sub variables	Source of variation	SS	Df	MS	F	Sig.
Learning Environment	Between Groups	173.71	2	86.85	6.36*	.002
	Within Groups	1392.54	102	13.65		
	Total	1566.24	104			

Effective Teaching	Between Groups	135.37	2	67.69	9.31*	.000
	Within Groups	741.68	102	7.27		
	Total	877.05	104			
Curriculum content	Between Groups	77.35	2	38.69	4.93*	.009
	Within Groups	799.66	102	7.84		
	Total	877.05	104			
Overall Sustainability	Between Groups	625.44	2	312.70	8.42*	.000
	Within Groups	3787.42	102	37.132		
	Total	4412.88	104			

* P < .05, Critical Value $F_{2,102}$ = 3.09

Table 2

Bonferroni post hoc test of the influence of ICT adoption practices on sustainability of private secondary schools in terms of Learning environment, Effective teaching, Curriculum content and overall sustainability.

Variables	ICT adoption practices (J)	ICT adoption practices	I – J	Std. Error	Sig.	(I)
Learning environment	Low ICT adoption practices	Moderate ICT adoption practice s	-3.238*	.911	.001	
		High ICT adoption practices	-1.606	.911	.081	
	Moderate ICT adoption practices	Low ICT adoption practices	3.238*	.911	.001	
		High ICT adoption practices	1.632	.848	.057	
	High ICT adoption practices	Low ICT adoption practices	1.606	.911	.081	
		Moderate ICT adoption practices	-1.632	.848	.057	
Effective teaching	Low ICT adoption practices	Moderate ICT adoption practices	-2.648*	.655	.000	
		High ICT adoption practices	-2.411*	.655	.000	
	Moderate ICT adoption practices	Low ICT adoption practices	2.648*	.655	.000	
		High ICT adoption practices	.237	.619	.073	
	High ICT adoption practices	Low ICT adoption practices	2.411*	.655	.000	
		Moderate ICT adoption practices	-237	.619	.073	
Curriculum content	Low ICT adoption practices	Moderate ICT adoption practice	1.691	.975	.257	
		High ICT adoption practices	-.042	.973	1.000	
	Moderate ICT adoption practices	Low ICT adoption practices	-1.691	.975	.257	
		High ICT adoption practices	-1.73 *	.575	.010	
	High ICT adoption practices	Low ICT adoption practices	.042	.973	1.000	
		Moderate ICT adoption practices	1.733*	.575	.010	
Overall sustainability	Low ICT adoption practices	Moderate ICT adoption practices	-5.688*	1.503	.000	
		High ICT adoption practices	-5.188*	1.503	.001	
	Moderate ICT adoption practices	Low ICT adoption practices	5.688	1.503	.000	

	High ICT adoption practices	.500	1.398	.721
High ICT adoption practices	Low ICT adoption practices	5.180	1.503	.001
	Moderate ICT adoption practices	-.500	1.398	.721

*The mean difference is significant at the .05 level

In the aspect of learning environment, the post hoc result in table 2 using the significant two-tail and the mean difference significant at .05, revealed that there was significant difference between private secondary schools with low ICT adoption practices and those with moderate ICT adoption practices (-3.238*, .001). There was no significant difference between private secondary schools with moderate ICT adoption and those with high ICT adoption practices, there was a significance difference between private secondary schools with high ICT adoption practices and those with low ICT adoption practices.

In the aspect of effective teaching, the post hoc results in table 2 revealed that there was significant difference between private secondary schools with low ICT adoption practices and those with moderate ICT adoption practices (-2.648*, .000), significant between low and high ICT adoption practices (-2.411*, .000), which is the same relationship between moderate and low ICT adoption practices, high and low ICT adoption practices respectively. Finally there was no significance difference between private secondary schools with moderate and high ICT adoption practices.

In the aspect of curriculum content, the post hoc results in table 2 revealed that there was significant difference between private secondary schools with moderate ICT adoption practices and private secondary schools with high ICT adoption practices (-1.773*, .010). Which is the same relationship between private secondary schools with ICT adoption practices and moderate ICT adoption practices. And finally there was no significant diiference between private secondary schools with low ICT adoption practices and those with moderate and high ICT adoption practices in terms of curriculum content.

In the aspect of overall sustainability, the post hoc results in table 2 revealed that there was a significant difference between private secondary schools with low ICT adoption practices and those with moderate ICT adoption practices (-5.688*, .000), significant between low and high ICT adoption practices (-5.188*, .001), which is the same relationship between moderate and low ICT adoption practices, high and low ICT adoption practices respectively. Finally there was no significance difference between private secondary schools with moderate and high ICT adoption practic.

Discussion of findings

The findings as revealed in the one-way analysis of variance (ANOVA), shows that there was a significant influence of ICT adoption practices on sustainability of private secondary schools in terms of learning environment, effective teaching and curriculum content. As such, it's not possible for private secondary schools to stand the competitive nature of today academic world without the effective involvement and use of ICT skills and strategies in her educational system. On the other hand, the demand for computer/ICT literacy is increasing in Nigeria, because employees have realized that computers and other ICT facilities can enhance efficiency. Similarly, employees have also realized that computers can be a threat to their jobs, and the only way to enhance job security is to become computer literate. With the high demand for computer literacy, the teaching and learning of these skills is a serious concern among professionals. This is also true of other ICT

components. According to Aginam (2016), the importance of ICT adoption practices also prompted the Federal Government of Nigeria to launch the use of ICT in secondary schools and this makes it difficult for private secondary schools to enjoy the usual patronage without efficiently having ICT facilities and skills.

The result of the findings is in agreement with Eyong (2017) who found out that there was no significant difference in the mean rating of teachers and proprietors on the effect of ICT skills in the sustainability of private secondary schools. According to the author, new instructional techniques that use ICTs provide a different modality of instruments. For the student, ICT use allows for increased individualization of learning. In schools where new technologies are used, students have access to tools that adjust to their attention span and provide valuable and immediate feedback for literacy enhancement, which is currently not fully implemented in the Nigerian school system. ICT application and use will prove beneficial in improving Nigeria's educational system and giving students a better education. A technologically-advanced workforce will lead to ICT growth in Nigeria, with the potential to improve military technology and telecommunications, media communications, and skilled ICT professionals who will be well-equipped to solve ICT problems in Nigeria and other parts of the world.

Conclusion

Based on the results of the study, it was concluded that ICT adoption practices significantly influence sustainability of private secondary schools in terms of learning environment, effective teaching and curriculum content. As such, private schools in Cross River State in particular and Nigeria at large cannot afford to continually lag behind other countries in areas of ICT and computer usage. The continuous and conscious adoption of ICT practices in Nigeria will help to properly prepare the students for entrepreneurship and employment, thereby reducing unemployment and fast-track the nation's quest to achieve Millennium Sustainable Goals.

Recommendations

On the basis of the findings of the study, the following recommendations were made:

1. In-service training should be conducted regularly by private school administrators to acquaint teachers with recent innovations in management and ICT facilities available for teaching and learning.
2. Private schools should set standard for teachers and other personnel employed into the school system.
3. Series effort should be put in place by private secondary schools to provide adequate ICTs facilities to boost information technologies in the state.

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