INFORMATION COMMUNICATION TECHNOLOGY MANAGEMENT AS PREDICTOR OF TEACHERS' INSTRUCTIONAL DELIVERY IN SECONDARY SCHOOLS IN RIVERS STATE, NIGERIA

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Abstract

The study investigated information communication technology management as predictor of teachers' instructional delivery in secondary schools in Rivers state, Nigeria. two research questions and hypotheses were answered and tested. The study adopted a correlation survey research design with a population of 8560 teachers in the 286 schools. The sample size was 856 teachers drawn through proportionate stratified random sampling technique representing 10% of the population. Two instruments, Information and Communication Technology Management Scale (ICTMS) and Effective Instructional Delivery Scale (EIDS) were used for data collection. Face validity was ensured for the instrument by three experts. The internal consistency reliability coefficient of 0.81 and 0.83 were computed for ICTMS and EIDS through Cronbach alpha. Simple regression was used to answer the research questions while t-test associated with simple regression was used to test the hypotheses at 0.05 level of significance. information and communication technology lead to effective instructional delivery in secondary school in Rivers State. Specifically, it was found that e-library and computer assisted instruction are factors of effective instructional delivery in secondary school in Rivers State. Based on the findings, the following recommendations were made that: the school principals should integrate e-library in secondary schools in Rivers State. More so, the principals should organize training and workshops for teachers on the use of computer-assisted instruction in daily instructional delivery.

Keywords: Information Communication Technology Management and instructional delivery

Introduction

Management of the school system has become a herculean task to the school administrators. This could be as a result of digitalization. Digitalization has taken a pride of place in every sector of the economy as well as in the school system. This has turned the globe into a small community where information shared can be read by all almost at the same time for those who are digitally compliant. Digitalization is the means of transmitting information into a digital form. Digitalization in simple meaning is the use of digital technologies to convey information. Digitization of education system is an opportunity to develop a cognitive resource-based mechanism in learners and improve the skills, lifelong learning and continuous education. Digitization produces information that can be conveyed in many different methods. Digitalization cannot be possible to a reasonable extent without information and communication technology.

Information and communication technology entails the use of computer hardware, network, computers and mobile phones in information and communication engagements. According to Linways (2017), Information and Communication Technology (ICT) in the school system is the use of information and communications technology to support, enhance, and optimize the delivery of information. More so, Information and Communications Technology (ICT) can enhance student learning who are under digitally literate teachers (UNESCO, 2023). It is reported that teachers who are digitally competent can use technologies to communicate instruction to the students. The most commonly used ICT system in education system are e-library and computer-based instruction.

E-library can be seen as the use of online text-materials in the educational system. Specifically, e-library is the collection of online documents in an organized digital format from the internet (Pearson India Education Services, 2022). E-library is not concrete library where books are

stacked in shelves but requires internet connectivity for it to be put to use. E-library requires good internet connectivity and sensitivity that can only be achieved through frequent services and upgrading of the internet band width (Anele, 2019).Pearson India Education Services (2022) also reported that e-learning is indispensable in the educational attainment. For effective use of e-library, computer or phone application are necessary. E-library is found to be a usable technological platform that enhance teaching and learning processes (Anele, 2019). The Pearson India Education Services further stressed that the purpose of an e-library is mainly to store, access, handle magazine articles, books, audio files, images, as well as video files. The e-library cannot be accessed without technologies such as phones and computers.

A computer is an electronic device that can be used in assisted instruction. Computer-assisted instruction according to Cotton (1991), is the use of computer in instructional delivery against the conventional traditional method. In the same vain, Ilo found (2019) found that computer assisted instruction is a significant predictor of instructional achievement. More so, Ezema (2019) reported that effective teaching can be enhanced through computer aided approach. Based on this backdrop, the researcher investigated Information communication technology management as predictor of teachers' instructional delivery in secondary schools in Rivers state, Nigeria.

Purpose of the Study

The study investigated information communication technology management as predictor of teachers' instructional delivery in secondary schools in Rivers state, Nigeria. Specifically, the study sought to:

1. find out the extent e-library can predict effective instructional delivery in secondary schools in Rivers State, Nigeria.
2. find out the extent computer-based instruction can predict effective instructional delivery in secondary schools in Rivers State, Nigeria.

Research Questions

The following research questions were answered to guide the study.

1. To what extent can e-library predict effective instructional delivery in secondary schools in Rivers State, Nigeria?
2. To what extent can computer-based instruction predict effective instructional delivery in secondary schools in Rivers State, Nigeria?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

1. E-library does not significantly predict effective instructional delivery in secondary schools in Rivers State, Nigeria.
2. Computer-based instruction does not significantly predict effective instructional delivery in secondary schools in Rivers State, Nigeria.

Methodology

The study adopted a correlation survey research design with a population of 8560 teachers in the 286 schools. The sample size was 856 teachers drawn through proportionate stratified random sampling technique representing 10% of the population. Two instruments, Information and Communication Technology Management Scale (ICTMS) and Effective Instructional Delivery Scale (EIDS) were used for data collection. The ICTMS is a 20-item instrument that has two sections of A and B respectively. Section A was used to elicit the demographic information of the respondents. Section B has two clusters that measured E-library, and Computer-Assisted Instruction ten items to elicit information from each cluster. The EIDS was structured to have four-point response options of Very High Extent (4), High Extent (3), Low Extent (2) and Very Low Extent (1) respectively. The EIDS is a ten-item instrument. Face validity was ensured for the instrument by three experts. The internal consistency reliability coefficient of 0.81 and 0.83 were computed for ICTMS and EIDS through Cronbach alpha. Simple regression was used to answer the research questions while t-test associated with simple regression was used to test the hypotheses at 0.05 level of significance.

Results

Research Question 1: to what can e-library predict instructional delivery in secondary schools in Rivers State, Nigeria?

Table 1: simple regression of the prediction of e-library on effective instructional delivery in secondary schools in Rivers State, Nigeria

Model	R	R Square	Adjusted R Square	Decision
1	.77[3]	.59	.56	High extent

Data on Table 1 reveals that the regression value is 0.77 while the regression square value is 0.59 respectively. The extent of correlation is gotten by multiplying the regression value square by 100%. Thus, coefficient determinism of 59% reveals that e-library predicts effective instructional delivery in secondary schools in Rivers State, Nigeria to a high extent.

Research Question2: to what extent can computer-based instruction predict instructional delivery in secondary schools in Rivers State, Nigeria?

Table 2: simple regression of the prediction of computer-based instruction on effective instructional delivery in secondary schools in Rivers State, Nigeria

Model	R	R Square	Adjusted R Square	Decision
1	.87	.76	.78	High extent

Data on Table 2 reveals that the regression value is 0.87 while the regression square value is 0.76 respectively. The extent of correlation is gotten by multiplying the regression value square by 100%. Thus, coefficient determinism of 76% reveals that computer-based instruction predicts effective instructional delivery in secondary schools in Rivers State, Nigeria to a high extent.

Hypothesis 1: E-library does not significantly predict instructional delivery in secondary schools in Rivers State, Nigeria.

Table 3: t-test associated with simple regression of the prediction of e-library on effective instructional delivery in secondary schools in Rivers State, Nigeria

Model	Unstandardized Coefficients		Standardized Coefficients			Decision
	B	Std. Error	Beta	t	Sig.	
(Constant)	6.11	2.00		2.51	.00	
E-library	.34	.66	.77	7.44	.00	Significant

P<0.05

Data on table 3 reveals that the t-test value of 7.44 associated with simple regression is rejected because the significant value of 0.00 is less than 0.05 alpha level of significance. Therefore, there is a significant prediction of E-library on instructional delivery in secondary schools in Rivers State

Hypothesis2: Computer-based instruction does not significantly predict effective instructional delivery in secondary schools in Rivers State, Nigeria.

Table 5: t-test associated with simple regression of the prediction of computer-based instruction on effective instructional delivery in secondary schools in Rivers State, Nigeria

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Decision
		B	Std. Error	Beta			
1	(Constant)	5.32	1.08		3.12	.00	
	Computer assisted instruction	.76	.65	.87	2.21	.00	Significant

P<0.05

Data on table 4 reveals that the t-test value of 2.21 associated with simple regression is rejected because the significant value of 0.00 is less than 0.05 alpha level of significance. Therefore, there is a significant prediction of computer assisted instruction on effective instructional delivery in secondary schools in Rivers State.

Discussion of Findings

The finding revealed that e-library to a high extent significantly predicted effective instructional delivery in secondary schools in Rivers State, Nigeria. The finding of this study is consistent with that of Pearson India Education Services (2022) who found that e-library is associated with educational achievement. The findings of this study is in tandem with that of Anele (2019) who revealed that e-library technological platform is necessary for school instruction. This finding showed that the use of e-library is associated with effective instructional delivery.

The study also revealed that computer-based instruction to a high extent significantly predicted effective instructional delivery in secondary schools in Rivers State, Nigeria. The finding of Ilo (2019) is in agreement with the present study that found that t computer assisted instruction is a significant predictor of instructional achievement. More so, the finding agreed with Ezema (2019), who reported that effective teaching can be enhanced through computer aided approach. Effective instructional delivery can be achieved through computer-assisted instruction because through computers, the teachers can project images, information and instruction on interactive whiteboard.

Conclusion

Based on the findings of this study, the researchers' concluded that information and communication technology lead to effective instructional delivery in secondary school in Rivers State. Specifically, it was concluded that e-library and computer assisted instruction are factors of effective instructional delivery in secondary school in Rivers State.

Recommendations

Based on the findings, the following recommendations were made that:

1. The school principals should integrate e-library in secondary schools in Rivers State.

2. The principals should organize training and workshops for teachers on the use of computer-assisted instruction in daily instructional delivery.

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