



AVAILABILITY AND UTILIZATION OF INSTRUCTIONAL TECHNOLOGIES IN SUPERVISION IN PUBLIC SECONDARY SCHOOLS DURING COVID-19 ERA IN CROSS RIVER STATE, NIGERIA

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ABSTRACT

This study investigated the availability and utilization of instructional technologies in supervision in public secondary schools in Cross River State, Nigeria. To achieve the purpose of this study, descriptive survey research design was adopted; a research question was raised and two hypotheses were formulated to guide the study. The population of this study comprised the entire 279 respondents drawn through census approach from all the public secondary schools in Cross River State. Data collection was carried out with the use of researchers' constructed instrument titled: Availability and Utilization of Instructional Technologies in School Supervision during COVID-19 Pandemic Survey (AUITSSCOVID-19PS). The instrument was validated and reliability was established through Cronbach Alpha analysis which yielded .90 hence indicating high internal consistency in achieving the purpose of this study. In order to answer the research question, data collected were analyzed using mean and standard deviation while the hypotheses were tested with independent t-test statistical techniques. The results showed that the availability of instructional technologies used in school supervision is very low. It was also found that the extent of utilization of instructional technologies in school supervision is very low. Based on the findings and discussion, conclusions were made. It was therefore recommended among others that the government should ensure that adequate instructional technologies are provided and utilized in supervising secondary schools especially during this period of global COVID-19 pandemic.

KEYWORDS: Availability, Utilization, Technologies, School Supervision, COVID-19 Pandemic

INTRODUCTION

Globally, the issue of supervision in the school system for decades has been a subject of strong debate among educational researchers and sundry. This is partly due to ineffective administration exacerbated by incompetent school managers over the years. It is also due to the havoc wrecked by the dreaded worldwide Covid-19 pandemic outbreak on all sectors of human activities (Uzoigwe, Owashi & Opuwari, 2020).

Before the pandemic, the Nigerian education system has adopted purely, face-to-face approached to teaching and learning in secondary schools. Like other sectors, while COVID-19 is primarily affecting public health, spillover effects can already be observed in education, stemming largely from extended school closures to deaths of hundreds of thousand across the globe. By current World Bank information gathering, at the time of writing this paper, more than 150 countries are

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reporting school closures and more are joining the trend in order to mitigate the spread of the virus. By obligation, school leaders are expected to employ their supervisory skills in overseeing educational resources for goals' achievement (Uzoigwe, Chuktu & Eton, 2020; Sunday, M. O.; Obogo, G. O. & Adie R. U.). However, as a branch of educational management, supervision is a day-to-day professional guidance of all educational operations, coordination of the detailed academic works and cultivation of good inter-personal relationship among all the people involved in the teaching-learning process in the school system. Effective supervision with emerging technologies is essential from principals during a pandemic outbreak because educational goals' achievement requires accountability, and cannot be realized in a vacuum. Effective utilization of emerging technologies such as computer devices in supervision enables school administrators to maintain social distance and stay safe while carrying out their duties effectively. However, through effective supervision, educational goals at the secondary school level are focused towards preparing individuals for higher education, equipping school leavers with the needed skills, knowledge and values for effective living within the society (Federal Republic of Nigeria, 2014). Supervisory leadership in schools at this level is expected to be at its best and of good quality in order to enhance effective teaching and learning in all subjects. It has to encourage knowledge acquisition, the opportunity for higher education and better learning outcome among the school leavers.

At the peak of the pandemic, 45 countries in the Europe and Central Asia region closed their schools, affecting 185 million students. Given the abruptness of the situation, teachers, supervisors and administrators were unprepared for this transition and were forced to build emergency remote learning systems using advanced technologies almost immediately. Besides, under normal circumstances, the process of effectively addressing pandemic crises in the education sector by school managers begin with a proactive preparation, that is, a response in anticipation of a known or unknown crisis. This happens such that when amidst the crisis, they move to coping by implementing measures to minimize the negative impact. This may include introducing protocols for screenings in schools, rolling out hygiene practice campaigns, imposing school closures, offering distance learning, using closed schools for emergency purposes, among others. Other measures include enforcing the wearing of face mask, social distancing, school environmental disinfection, diagnostic testing, symptomatic isolation and using hand sanitizers (Uzoigwe, Onabe, Onwochei and Ekpenyong, 2020). As the emergency phase dissipates, communities move into a recovery mode and governments implement policies and measures to regain lost time. The approaches may include adjustments to the academic calendar, prioritizing grades by preparing for standard examinations, continuing with distance learning in parallel to schools, to mention a few.

Those countries that have shown greater resilience in repeated crises are those who were able to benefit from lesson learned and use the momentum to re-prepare, investing and reinforcing systems going forward.

Similarly, in Nigerian school system, one of the key policies adopted by Federal Republic of Nigeria (2014) is the integration of instructional technologies in school supervision. Instructional technology is the combined use of computer hardware, software, and educational theory and practice to facilitate learning. Integration of instructional technology in school supervision encompasses the installation of Information and Communication Technology hardware and Software/laboratories to promote the attainment of school goals. This is essentially important because secondary school is established by law to train students for useful living within the society and furtherance to higher education. Therefore, the availability and effective utilization of instructional technologies in school supervision would to a great extent help supervisors to access communication platforms like WhatsApp, Twitter, Facebook, Instagram, or Tumblr, and so on for enabling dynamic communication with students, teachers and principals without merely experiencing face-to-face contact during pandemic crises in the school system. Also, educational supervision-empowering technologies include mobile apps that grade written lesson notes and provide lesson plan databases. Buttressing this fact, Cano and Garcia (2021) stated that school systems need to aggressively track emerging technologies that work for their teachers and supervisors during pandemic crises and put all other unworkable technologies aside.

Unfortunately, the researchers have observed that despite best efforts to set up a supportive remote learning experience using emerging technologies in school supervision during pandemic crises by Cross River State government in public secondary schools, evidence is sadly evolving on the extent of non-availability and poor utilization of emerging technologies in the study area which have resulted in poor teaching and learning during the pandemic. Lack of technical support, inadequate ICT infrastructure on ICT and lack of professional development were identified as the barriers hindering teachers and supervisors to use emerging technologies to facilitate supervision in secondary schools. There are no provisions of computer spreadsheet, PowerPoint/projector, overhead projector, school portal, electronic database, desktop computers, laptop computers, printers, photocopier, scanner, CD ROM, Flash drive, internet facilities, mobile phones, Radio set, Television set, among others. Insufficient technologies and poor utilization of these devices in school supervision have degenerated not only to corrupt practices such as mutilation of school records and examination malpractices but also violated the support of the key messages and actions submitted for COVID-19 prevention and control in schools as endorsed by Federal Ministry of Health, UNICEF, NCDC and World Health Organization. Poor utilization of technologies in

school supervision has also made the tasks daily administrative improvisation of principals more inefficient and ineffective. Low level of utilization of technological supervision process has hindered the use of ICT for lesson content delivery and sharing, and to facilitate the interaction between teachers and students and a supervisor, as well as between the students.

There is no gain saying that adequate provision of emerging technologies and their effective utilization would play important roles in enhancing the quality of education, especially during a pandemic outbreak due to its capabilities in facilitating administration activities from data storage to knowledge management and decision making. In a study carried out by Salih, (2017) on the supervision of information technology classrooms in Turkey: A nationwide survey. He found that most supervisors were familiar with computers, but only used them at the 'medium' level, mostly for word processing, spreadsheets and drawing up reports on school visits. It was also found that almost all of the respondents sought to support the effective development of technologically based classrooms by examining teachers' plans, providing computer application opportunities for pupils, and helping school principals encourage and manage such undertakings. However, almost 50% of the supervisors indicated that they had no knowledge or understanding of e-portfolios, and that they had never received professional development or in-service training in exploiting the technologically based classroom. As a result, they were unable to provide sufficient guidance to teachers. Similarly, Mathayo (2016) found that lack of technical support, inadequate instructional technologies and lack of professional development were identified as the barriers hindering teachers to use instructional technologies to facilitate teaching in secondary schools. The finding also showed that on examining the factors determining the use of emerging technologies in teaching in secondary schools, the study identified the following factors: - teachers' positive attitude, teachers' competence in technology use, accessibility of technological facilities, professional development and availability of technical support. Correspondingly, David, Tanui and Oruta (2019) found that the overall implementation and use of emerging technologies in school supervision in all the departments of school administration of the public schools in Kajiado County was very low. The study concluded that most of the public secondary schools in Kajiado County had not embraced instructional technology in various areas of supervision. Amuchie, (2015) found out that the extent of availability of technological resources in secondary schools in Ardokola and Jalingo is very low. The extent of utilization of technological resources in teaching and learning is equally very low. Technological resources were not available in the schools for the use of supervisors, teachers and students for learning activities. It was also found out that many factors were perceived by the teachers and principals as constraints to the

effective utilization of technology in supervision in secondary schools. They include; poor power supply. Lack of adequately trained teachers in the use of instructional technology in teaching, high cost of computers and accessories among others. Also, Fahriye and Daglely (2020) revealed that headmasters have awareness on the use of digital and technological facilities. They are aware on digital transformation although budget and application restrictions are revealed to apply this transformation.

In the same vein, Diogo (2021) found that emerging technologies were used for content delivery and sharing, and to facilitate the interaction between postgraduate students and a supervisor, as well as between the students. Based on the supervisor's reflections, key positive and negative factors are also systematized. In a study carried out by Oluwadare, (2017) on the availability and utilization of emerging technologies in school supervision in Kaduna State, the results revealed that the available emerging technologies in the State were not adequate in schools and their utilization was a matter of concern. The study further revealed that the views of both the Male and Female Principals on the availability and utilization of emerging technology in the supervision of secondary schools did not differ. Nwana, Egbe and Ofoegbu (2017) found that many of the technological resources needed for the supervision of teaching of computer education were not available. It was also revealed that majority of the resources needed for the teaching of computer education were not being used by principals and the teachers. Chris, (2021) found that the available emerging technologies in the State were not adequate in schools and their utilization was a matter of concern. The study further revealed that the views of both the male and female principals on technological facilities availability and utilization in the management of secondary schools did not differ. Ohakwe and Okwuanaso (2016) contented that the knowledge of computer application softwares such as spreadsheet, excel, computer – aided design, and database are important skills in school's management. Therefore, the complexity of secondary school education requires more demand from school administrators in supervising and processing relevant data in an attempt to provide information for the State Teachers Board and other educational agencies for decision making towards quality assurance and transformational development despite the outbreak of Covid-19.

Statement of the problem

Secondary schools were established by law against all odds to promote quality assurance by supporting school leavers to become useful members of the society as well as to further for higher education. But a cursory observation at Cross River State public secondary schools revealed some issues related to low availability and poor utilization of instructional technologies in supervision. There are no provisions for computer spreadsheet, PowerPoint/projector, overhead projector, school portal, electronic database, desktop computers,

laptop computers, for supervision of teaching and learning in the schools. Some administrators do not utilize internet, email, teleconferencing, audio tapes, computers, photocopiers and printers in supervising lesson notes, lesson plan and other instructional activities of teachers in order to stay safe especially during the period of Covid-19 outbreak. This results in poor teaching delivery among teachers and low academic performance of students in virtually all the subjects.

Recently the Federal Government contended that computer knowledge would be a requirement for some employments, interviews and in some cases promotions. But it seems as if instructional technologies have not been effectively made available and utilized in the supervision of schools as it appears, some vital areas of application are still not attended to in public secondary schools in Cross River State. It is on these bases that the study tends to empirically investigate the extent of availability and utilization of instructional technologies in supervision in public secondary schools during Covid-19 era in Cross River State, Nigeria.

Purpose of the study

The main purpose of the study was to examine the extent of availability and utilization of instructional technologies in the supervision of public secondary schools during Covid-19 era in Cross River State, Nigeria. Specifically, the study sought to find out:

1. The extent of principal instructional technology availability for the supervision of secondary schools in Cross State, Nigeria
2. The extent of principal instructional technology utilization in the supervision of secondary schools in Cross River State, Nigeria

Research questions

The following research questions were formulated to guide the study

- 1) What is the extent of instructional technology availability for the supervision of secondary schools in Cross River State, Nigeria?
- 2) To what extent do principals utilize instructional technology in supervising secondary schools in Cross River State of Nigeria?

Research Hypotheses

The following hypotheses were formulated to guide the study.

Ho₁: There is no significant difference in the mean responses of male and female principals on instructional technology availability in the supervision of secondary schools in Cross River State.

Ho₂: There is no significant difference in the mean responses of male and female principals on the extent of instructional technology utilization in the supervision of secondary schools in Cross River State.

METHODOLOGY

This research was carried out in Cross River State, Nigeria. The study adopted descriptive research design. The sample of this study comprised the entire 279 public secondary school administrators drawn through the census method from three education zones in Cross River State. A researcher-designed questionnaire titled: Availability and Utilization of Instructional Technologies in School Supervision during COVID-19 Pandemic Survey (AUITSSCOVID-19PS) was used to elicit information from the respondents. The instrument was structured into a four point Likert scale: VHE (Very High Extent), HE (High Extent), LE (Low Extent) and VLE (Very Low Extent). The instrument was face validated by three experts; one from Measurement and Evaluation and another from Educational Management of the University of Calabar. Cronbach Alpha method was used to determine the reliability coefficient at .90. The questionnaires were personally administered with the help of four trained research assistants. The copies were retrieved, scrutinized, gleaned and analyzed for the study. The statistical techniques for the data collected varied in accordance with the nature of research questions and hypotheses. Tables, frequency counts, mean scores and standard deviation were computed to answer the research questions 1 and 2. The mean of 2.50 was regarded as "Unavailable" while a mean response on or above 2.50 were regarded as "Available." By using The Statistical Package for the Social Sciences (SPSS). The independent t – test was used to test hypothesis 1 and 2. The two null hypotheses were tested at 0.05 level of significance. The scales were scored 4, 3, 2, and 1 respectively for positively worded items and reversed for negatively worded items.

Presentation of results

Research question one

- 1) What is the extent of instructional technology availability for the supervision of public secondary schools during Covid-19 era in Cross River State, Nigeria?

The result generated from the study is presented in table 1.

Table 1: Means ratings and standard deviation scores of views of principals on instructional technology availability in the supervision of secondary schools during Covid-19 era in Cross River State.

S/N	Instructional technologies	Mean	S.D	Decision
1	Internet	1.34	0.43	Unavailable
2	Multi-media projector	1.86	0.43	Unavailable
3	e-mail	1.22	0.34	Unavailable
4	Interactive radio	1.22	0.34	Unavailable
5	Teleconferencing	1.35	0.44	Unavailable
6	Audio tapes	1.87	0.43	Unavailable
7	Computers	1.22	0.34	Unavailable
8	Photocopiers	1.15	0.23	Unavailable
9	Handsets	1.85	0.84	Unavailable
10	Printers	1.89	0.43	Unavailable
	Grand mean	2.00		Unavailable

Cut-off mean=2.50

Table 1 showed that all the respondents disagreed on the extent of instructional technology availability in the supervision of secondary schools during Covid-19 era in Cross River State. All the 10 items had mean scores below the cutoff point of 2.50 on a four-point Likert scale. This result implies that the internet services, multi-media projector, e-mail, interactive radio teleconferencing, audio tapes, computers, photocopiers, handsets and printers were not available in all the sampled schools.

Research Hypotheses

The following hypotheses were tested in the study.

Ho₁: There is no significant difference in the mean responses of male and female principals on instructional technology availability in the supervision of secondary schools in Cross River State. The hypothesis was tested using independent t – test. The result generated from the study is presented in Table 2.

Table 2: Independent t–test analysis of the differences in the mean responses of male and female principal’s views on instructional technology availability in the supervision of Secondary schools in Cross River State.

Instructional technologies	Principals	N	Mean	S.D	S.E	Df	t-calculated	t-critical	Decision
	Males	79	2.86	.76	.22	277	1.09	2.02	NS
	Females	200	3.10	.82					

P<.05

Table 2 showed that the calculated t-test value of 1.09 is less than the criterion value of 2.02 at 0.5 level of significance to accept the null hypothesis of significant difference. This result implies that the views of both the male and female principals’ views on instructional technology availability in the supervision of secondary schools in Cross River State did not differ in the study area.

Ho₂: There is no significant difference in the mean responses of male and female principals on

the extent of instructional technology utilization in the supervision of secondary schools in Cross River State. The hypothesis was tested using independent t–test. The result is shown in table 3

Table 3: Independent t–test analysis of the differences in the mean responses of male and female principals’ views on instructional technology utilization in the supervision of Secondary schools in Cross River State.

Instructional technologies	Principals	N	Mean	S.D	S.E	Df	t-calculated	t-critical	Decision
	Males	79	2.69	.78	.21	277	1.91	2.02	NS
	Females	200	3.11	.80					

p<.05

Table 4 also showed that the calculated value of 1.91 is less than the criterion value of 2.02 at 0.05 level of significance. This implies that there is a significant difference in the mean scores of the principals. This is the views of both male and female principals on instructional technology utilization in the supervision of secondary schools in Cross River State not differ.

DISCUSSION OF FINDINGS

The analysis of research question one indicated that all the respondents disagreed on the availability of the items showing instructional technologies in the supervision of public secondary schools during Covid-19 era in Cross River State. From the Table, it was seen that all the 10 items had mean scores below the cut-off mean score of 2.50 using the four-point Likert scale. This result implies that the internet services, multi-media

projector, e-mail, interactive radio, teleconferencing, audio tapes, computers, photocopiers, handsets and printers were not available in all the sampled schools. The findings are not surprising because there could not be utilization of instructional technology without availability of the said technology especially during the period of Covid-19 pandemic era. It is therefore, obvious that lack of these core instructional technologies would make principals ineffective in supervising and achieving the laudable goals of public secondary schools in Cross River State.

The result of the hypotheses revealed that the views of both the male and female principals on the extent of utilization of instructional technologies in the supervision of public secondary schools during Covid-19 era in Cross River State. Table 2 shows that the calculated t-test value of 1.09 is less than the criterion figure of 2.02 at 0.05 level of significance. The implication of this result is that the null hypothesis is rejected while the alternate is retained. It means that there is a significant difference in the mean responses of male and female principals on instructional technology availability in the supervision of public secondary schools in Cross River State. Similarly, Table 3 equally shows that the calculated value of 1.91 is less than the criterion figure of 2.02 at 0.05 level of significance. This implies that the null is rejected while the alternate hypothesis is retained for the mean responses of male and female principals on instructional technology utilization in the supervision of secondary schools in Cross River State.

These findings agreed with Nwana, Egbe and Ofoegbu (2017) who found that many of the technological resources needed for the supervision and teaching of computer education were not available to be used by principals and teachers. The finding also tallies with that of Chris (2021) who found that the available instructional technologies in the State were not adequate in schools and their utilization was a matter of concern. The finding is in consonant with that of Ohakwe and Okwuanaso (2016) who contended that the knowledge of computer application software such as spreadsheet, excel, computer – aided design, and database were important skills in school's management.

CONCLUSION

Based on the findings of study, it is therefore imperative to conclude that the provision of instructional technologies and proper utilization of these devices in the supervision of secondary schools would bring teachers and educational administrators into the information age with computer training and with more teacher-oriented, easily accessible data bases that supports effective instructional delivery.

RECOMMENDATIONS

Based on the results and findings of the study, the following recommendations would go a long way to solve the problems of instructional technology

availability and utilization in the supervision of secondary schools in the state.

1. Government should ensure the adequate provision of basic instructional technologies alongside constant electricity in all the public secondary schools in Cross River State.

2. Government should also sponsor the re-training of principals and teachers on the utilization of instructional technology in educational supervision.

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