

CORRECTIVE MAINTENANCE PRACTICES ON SCHOOL FACILITIES FOR EFFECTIVE INSTRUCTIONAL DELIVERY IN TECHNICAL COLLEGES RIVERS STATE.

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Abstract

The study examined corrective maintenance practices of school facilities for instructional delivery in technical colleges in Rivers State. One research question guided the study and two null hypotheses was tested at 0.05 alpha level. It adopted survey research design. The population of the study comprised 104 teachers and students of four technical colleges in Rivers State. The entire population was used for the study since it was not too large and was manageable. Hence, the study did not adopt any sampling technique. A 17 – item structured questionnaire was used as instrument for data collection for the study. Three experts validated the instrument. Cronbach’s Alpha method was used to establish the reliability of the instrument in a pilot test; which yielded a reliability coefficient of 0.82. The instrument for data collection was sent to respondents through research assistants. Data related to the research questions were analyzed using mean and standard deviation. The t-test statistics was used to test the hypothesis at 0.05 level of significance. Findings from the study revealed that corrective maintenance practices on school facilities for effective instructional delivery were applied to a low extent in technical colleges in Rivers State. The study recommended among others that, the state government should repair, renovate and refurbish school facilities for effective teaching and learning to take place.

Keywords: School Facilities, Corrective Maintenance, Instructional Delivery, Technical Colleges

Introduction

Basically, education is generally seen as an aggregate of all the process by which a child or young adult develops his/her abilities, attitudes and other forms of behaviour which are value to the society in which he lives (Anaele, 2019) and this is why there has been a growing concern in the last few years about the quality education that is offered in the nation’s schools. The quality of education can be greatly affected if schools are deficient in essential facilities for effective instructional delivery in different fields learning.

School facilities form integral part of the educational system and observed as potent factor to qualitative and quantitative education. The importance of teaching and learning on the provision, utilization and maintenance of adequate institutional facilities for effective instructional delivery cannot be over-emphasized. According to Afigbo (2016), learning can occur through one’s interaction with one’s environment.

Environment here refers to facilities that are available to facilitate students learning outcome. It includes books, audio-visual, software and hardware of educational technology; size of classroom, sitting position and arrangement, availability of tables, size of classroom, sitting position and arrangement, availability of tables, chairs, chalkboards, shelves on which instruments for practicals are arranged (Farombi, 2018). Farombi further stated that the wealth of a nation or society could determine the level of education in that land; emphasizing that a society that is wealthy will establish

good quality lecturers, learning infrastructures, student learn with ease, thus bringing about effective instructional delivering. Anameze (2011) submitted that no effective technical education programme can exist without facilities for learning. This is because facilities enable the learner to develop problem – solving skills and scientific attitudes.

Effective school facility or responsive to the changing programs of educational delivery, at minimum, should provide a physical environment that is comfortable, safe, secure, accessible, well illuminated, well ventilated and aesthetically pleasing. School facilities form an integral part of the educational system and are observed as a potent factor to qualitative and quantitative education. Such facilities represent a learning environment with a tremendous impact on the comfort, safety and performance of the learner.

Commenting on why instructional delivery is not in vogue in Nigeria, Adesina (2018) identified poor and inadequate facilities, obsolete teaching techniques, overcrowded classrooms among others as factors. School facilities when provided and utilized will aid teaching and learning in the programme and consequently improve academic achievement of students. However, Ojoawa (2011), noted that certain schools are favoured in the provision and utilization of the facilities for learning especially in urban areas while Gamoran (2012), holding a contrary view noted that facilities and their utilization have little or no impact on the students' achievement once their background variables had been taken into account. This statement connotes that before such student could perform well in higher educational level, he must have been groomed or cushioned by resources available in his elementary and secondary school days which he now uses as a spring board.

Hallack (2010) noted that facilities form one of the potent factors for effective instructional delivery in the school system. They include the school buildings, classrooms, accommodations, libraries, laboratories, furniture, recreational equipment, apparatus and other facilities. He further added that unattractive school building and overcrowded classrooms among other contributed to poor instructional and poor academic attainment and these facilities should be located inappropriate places, while the need of the uses should be put into consideration.

Effective instructional delivery in technical education cannot be guaranteed where school facilities are not adequately provided, utilized and maintained in colleges of education. Yakubu (2016) notes that lack of funds has affected the provision of some essential facilities needed in the implementation of the programme in most of the colleges of education. It is now a common sight to find students of technical education sharing tables, seat, and other facilities in the classroom and laboratories. Yakubu also observed that standards often tend to decline after the accreditation visits rather than being maintained or improved upon as expected. The author further alleged that some institutions and departments sometimes stage manage their facilities and even personnel, all of which disappear to the rightful owners as soon as accreditation is over. This leads to production of poorly trained technical teachers as observed by Eze and Olaitan (2015) that teachers recruited into teaching position in schools do not meet the quality required for effective instructional delivery due to poor utilization and maintenance of schools' facilities in their training institutions.

The success or failure of any technical education programme in the college of education depends on utilization and maintenance of available facilities for effective instructional delivery. School facilities if properly maintained will create a conducive environment for learning. Imran (2018) defined maintenance as all cost-effective practices to keep equipment operational i.e All actions taken to keep

facility in condition to carry out its mission. Imran further classified maintenance as Preventive, Corrective and Predictive maintenance.

Corrective maintenance takes place after the break down or malfunction of an equipment or facility. This method is applied to equipment that has failed and thus broken down due to either improper operations or a defective part. It is concerned with the detection, location and repairs of faults as they occur. This requires a good understanding of system fault location methods in addition to an understanding of overall system and circuit operation.

Corrective maintenance includes remodeling, renovating and updating of existing facilities, avoiding obsolesce and making the facilities adaptable to current educational needs (Uko, 2012). The method is applied to an equipment that has failed and thus breakdown due to either improper operations or a defective part. It is concerned with the detection, location and repairs of faults as they occur. They require a good understanding of system fault location methods in addition to an understanding of overall system and circuit operation. Routine maintenance requires periodic servicing of machines and equipment monthly, quarterly, yearly as per the requirements provided in the manufacture's guide. (Agenyi, 2012). Emergency maintenance may take place due to unforeseen occurrences which may be as a result of lack of maintenance culture (Ihuoma, 2018). Structural maintenance is carried out due to the structural needs of some equipment such as refurbishing, refabricating or reshaping due to current requirement or new designs (Agenyi, 2012).

Geographical location of schools can affect the extent of maintenance of school facilities for effective instructional delivery in technical education. However, according to Ololube (2017), there are disparities between the urban and rural schools in terms of availability, utilization and maintenance of educational facilities Ololube further observed that with regard to almost every conceivable relevant educational facility, urban schools seem to fare better than rural schools.

Guldee (2015) observed that despite having government funding, some schools in the rural areas reportedly have leaking roofs, gaping holes on windows and floors, unreadable white boards, no visual teaching aids and poor libraries for effective teaching and learning in different fields. The author further asserted that Nigerian education has suffered at the hands of a succession of often-brutal military regimes that lacked value for the system resulting to total neglect of school facilities such as laboratory/workshop equipment, buildings, classrooms, space and furniture among others. It is based on this background that the study on corrective maintenance practices on school facilities for effective instructional delivery in technical colleges in Rivers State was conceived.

Statement of the Problem

The philosophy of technical education in technical colleges in Nigeria is to provide students with intellectual and professional background adequate for teaching technical subjects and to make them adequate to any changing situation in technological development not only in the country, but also in the world at large (NCCE 2013). It is one thing for facilities to be provided to schools and another thing for them to be adequately maintained for effective instructional delivery in all fields of learning especially in technical education. This is why Bello (2016) affirmed that availability of school facilities cannot bring about effective instructional delivery if they are not properly maintained. Observations indicate that virtually all technical colleges in Rivers State have unconducive classrooms, tools and facilities which are hazardous. Some college buildings are usually in bad condition with both leaking blown-off roofs and broken walls which constitute danger to the lives of the users and invariably

pose a threat to effective teaching and learning. Students are often seen struggling or queuing to use facilities which is indicative of inadequacy leading to a poor maintenance.

This worrisome situation if not urgently reversed will deny the zone the benefits of good quality technical education graduates who would engage in self-employment and create jobs for others for enhanced development. This is why it is imperative to conduct this study on the corrective maintenance practices on school facilities for effective instructional delivery in technical colleges of Education in Rivers State.

Aim and Objectives of the Study

The main purpose of the study was to determine the extent of corrective maintenance practices carried out on school facilities for effective instructional delivery in technical colleges in Rivers State. Specifically, the study sought to determine the extent at which:

- i. Corrective maintenance practices are applied on school facilities for effective instructional delivery in technical colleges in Rivers State.

Research Question

The following research question guided the study:

- i. To what extent are corrective maintenance practices applied on school facilities in technical colleges in Rivers State.

Hypotheses

The following null hypotheses were tested at 0.05 level of significance

- 1 Teachers and Students do not differ significantly in their mean ratings on the extent at which corrective maintenance practices on school facilities for effective instructional delivery are applied in technical colleges in Rivers State.
2. Location of teachers and students in terms of urban and rural areas did not significantly influence their mean ratings on the extent at which corrective maintenance practices are applied on school facilities for effective instructional delivery in technical colleges in Rivers State.

Method

This study adopted the descriptive survey research design. The population of the study will comprise all 104 teachers and students (teachers: 30; students: 74) in the four technical colleges in Rivers State. The entire population was used for the study because the size was not too large. The instrument for data collection for this study was a structured questionnaire titled "Corrective Maintenance Practices on School Facilities Questionnaires (CMPSFQ)". The instrument had two main sections; A and B. Section A contains two items on demographic data of respondents while section B contains 17 items with five point scale of Very High Extent (VHE), High Extent (HE), Moderate Extent (ME), Low Extent (LE) and Very Low Extent (VLE). To ascertain the validity of the research instrument, the researcher submitted draft copies of the instrument alongside with research topics, purpose of the study, research questions and hypotheses to two experts in Vocational and Technical Education from the Department of Technology and Vocational Education in Nnamdi Azikiwe University Awka and Alvan Ikoku College of Education Owerri, and one other expert in measurement and evaluation from the Department of Educational Foundations from faculty of

Education, Nnamdi Azikiwe University, Awka. Their inputs were used in modifying the items to acceptance standard; thereby making it appropriate for data collection.

To determine the reliability of the instrument, Cronbach Alpha method was used to analyze a pilot study with 10 teachers and 10 students in a technical college in Bayelsa State. The reliability Coefficient value 0.82 was obtained. The researcher through the help of research assistants administered 104 copies questionnaire to the respondents; out of which, 97 copies were retrieved after two weeks for data analysis. Descriptive statistics of mean and standard deviation was used to answer the research questions and determine the closeness of the respondents' views. Decision on the questionnaire items and research questions were based on mean rating of 3.50 points. Therefore, items with mean ratings of 3.50 points and above were regarded to have to a high extent while items with mean ratings below 2.50 points were regarded to have influenced it to a low extent. The t-test statistical tool was used to test the null hypothesis at 0.05 level of significance. A null hypothesis was rejected where the calculated p-value was less than the 0.05 level of significance; it meant that there was a significant difference between mean responses. Conversely, where the calculated p-value was greater than or equal to the level of significance 0.05; it meant that there was no significant difference and the hypothesis was accepted.

Results

Data analyzed for research question and hypotheses were presented in tables 1 to 3.

Research Question One: To what extent are corrective maintenance practices applied on school facilities in technical colleges in Rivers State.

Data collected in respect of research question 3 were analyzed and presented in table 1.

Table 1: Mean Ratings and Standard Deviation on Corrective Maintenance of School

			Facilities. N= 97	
S/N		Mean	SD	Decision
1.	Damaged facilities are repaired immediately	3.64	1.12	High Extent
2.	Broken furniture (chairs or tables) are quickly replaced	2.27	0.70	Low Extent
3.	Cracked walls and floors are repaired	4.01	1.75	High Extent
4.	School building are not delayed in repairing until they become worst	4.02	0.92	High Extent
5.	Discovered cracks in the building are repaired immediately	3.97	1.22	High Extent
6.	The compounds and workshop are kept tidy if littered.	3.04	0.93	Low Extent
7.	Fans and air conditioners should be repaired when faults developed so as to avoid electrical fire outbreak	3.41	1.04	Low Extent
8.	Expired spare parts should be changed	3.28	0.98	Low Extent
9.	Rusted facilities are greased to function	3.84	0.96	High Extent
10.	Blockage nozzles in facilities are replaced to help free flow	3.09	0.95	Low Extent
11.	The facilities that have shafts are replaced when blunt	3.99	1.04	High Extent
12.	Malfunction parts are detected and replaced when tested	2.29	0.70	Low Extent
13.	Calibrated facilities are replaced when they are not accessible to students	3.73	1.14	High Extent
14.	Washers are used to tighten the nuts on the materials when they are moving freely	3.09	0.95	Low Extent
Cluster Mean		3.40	1.02	Low Extent

Data in Table 1 show 7 items have mean ratings ranging from 3.64 to 4.02 meaning that the items to a high extent are applied for corrective maintenance of school facilities in college of education in South-East Nigeria for effective instructional delivery in technical education. Also, the rest Items have mean ratings of 3.04 to 3.41 indicating that corrective maintenance to low extent are applied on school facilities in technical colleges in Rivers State for effective instructional delivery in technical education. The cluster mean of 3.40 indicate that, in the opinion of the respondents, corrective maintenance practices on school facilities for effective instructional delivery in technical colleges were applied to a low extent. The standard deviations of 0.70 to 1.75 show that the respondents were homogenous in their responses.

Hypothesis 1

Teachers and Students do not differ significantly in their mean ratings on the extent at which corrective maintenance practices on school facilities for effective instructional delivery are applied in technical colleges in Rivers State.

Data obtained in respect of hypothesis 1 were analyzed and presented in table 2.

Table 2: T-Test Comparison of the Mean Ratings of Teachers and Students on the Extent of Application of Corrective Maintenance on School Facilities

Respondents	N	$\bar{X}$	SD	α	df	t-cal	p-value	Decision
Students	74	3.53	.13	0.05	95	1.16	.072	Not Significant
Teachers	30	3.47	.14					

Data in table 1 show that respondents do not differ significantly in their mean ratings on the extent at which corrective maintenance practices are applied on school facilities for effective instructional delivery in technical colleges with mean scores of 3.53 and 3.47 while the corresponding standard deviation is .13 and .14 respectively. The table indicated a t-value of 1.16, at degree of freedom of 95 and a p-value of .072. Testing at alpha level of 0.05, the p-value is not significant, since the p-value is greater than the alpha value (0.05). Therefore, the null hypothesis is not rejected; hence, teachers and students do not differ significantly in their mean ratings on the extent at which corrective maintenance practices are applied on school facilities for effective instructional delivery in technical colleges in Rivers State.

Hypothesis 2

Location of teachers and students in terms of urban and rural areas did not significantly influence their mean ratings on the extent at which corrective maintenance practices are applied on school facilities for effective instructional delivery in technical colleges in Rivers State.

Data obtained in respect of hypothesis 2 were analyzed and presented in table 3.

Table 3: t-test Comparison of the Mean Ratings of Teachers and Students on the Extent of Application of Corrective Maintenance on School Facilities Based on Location

Location	N	$\bar{X}$	SD	α	df	t-cal	p-value	Decision
Urban	65	4.20	.87	0.05	95	0.82	.061	Not Significant
Rural	39	4.10	.54					

Data in table 3 show that location do not significantly influence respondents' mean ratings on the extent at which corrective maintenance practices are applied on school facilities for effective instructional delivery with mean scores of 4.20 and 4.10 while the corresponding standard deviation is .87 and .54 respectively. The table indicated a t-value of 0.82, at degree of freedom of 95 and a p-value of .061. Testing at alpha level of 0.05, the p-value is not significant, since the p-value is greater than the alpha value (0.05). Therefore, the null hypothesis is not rejected; hence, location of urban and rural does not significantly influence respondents' mean ratings on the extent which corrective maintenance practices are applied on school facilities for effective instructional delivery in technical colleges in Rivers State.

Discussion

The findings of this study revealed that corrective maintenance practices are carried out to low extent on school facilities in technical colleges in Rivers State. The corrective maintenance practices include the repair, renovation and replacement of school facilities. This supports the findings of Owwoeye and Yara (2010); Bizmana & Rodho (2014) and Danjuma & Adedeje (2015) that items like books, teaching aids and other instructional materials that are lost, misplaced or damaged are not readily replaced in schools; thereby resulting in poor instructional delivery.

The findings also shows that teachers and students did not significantly differ in their mean ratings on the extent at which corrective maintenance practices are applied on school facilities for effective instructional delivery in technical colleges in Rivers State. The findings corroborate Owuamanam (2015) and Olaniyonu (2016) that the corrective maintenance practices are moderately carried out on school facilities regardless of school location and ownership. Corrective maintenance practice which includes remodeling, renovating, replacement and updating and upgrading of existing facilities are essential for effective instructional delivery in technical education. **Conclusion**

From the findings of the study and discussion that followed, the study was concluded by the researcher that both technical colleges in urban and rural areas in Rivers State carry out corrective maintenance practices on school facilities for effective instructional delivery to a low extent.

Recommendation

Based on the findings of this study and conclusion reached, it was recommended that corrective maintenance practices such as repairs, renovation and refurbishing of school facilities should be carried out in all technical colleges in Rivers State by the State government.

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