Facilities Improvement in Tertiary Institutions for Accelerated Teaching and Learning of Technical Education through Public-Private Partnership in Rivers State

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Abstract

The study focused on improvement of facilities in tertiary institutions for accelerated teaching and learning of technical education programmes through public-private partnership in Rivers State, Nigeria. Specifically, the study examined improvement of workshop and library facilities in tertiary institutions for accelerated teaching and learning of Technical Education programmes through Public-Private Partnership in Rivers State, Nigeria. The population of the study consisted of 1,704 respondents (212 lecturers and 1,492 students) among the three (3) tertiary institutions offering technical and vocational education programme in Rivers State. A sample of 450 respondents (112 lecturers and 338 students) was used for the study. The descriptive survey research design was used. The instrument for data collection was a 20-items structured questionnaire designed by the researchers on a 5-points likert scale. Inferences drawn on the respondents' score were based on the decision rule: 4.50 - 5.00 =Strongly Agree; 3.50 - 4.49 = Agree; 2.50 - 3.49 = Undecided; 1.50 - 2.49 = Disagree and 1.00 - 1.49 =Strongly Disagree. The instrument was validated by three experts in technical education from Ignatius Ajuru University of Education Port Harcourt. The reliability of the instrument was established using Spearman Rank Order Correlation Coefficient and 0.88 level of consistency was established. The study gathered that improvement of workshop and library facilities in technical education programmes through public-private partnership accelerates teaching and learning in Rivers State, Nigeria. Recommendation reached amongst others is that collaboration between technical education institutions and the private organizations should be strengthened in order to ascertain the needs of the institutions.

Keywords: Facilities, Tertiary Institutions, Technical Education, and Public-Private Partnership

Introduction

Technical vocational education and training (TVET) is globally recognized for its role in preparing people for dynamic engagement in occupations of functional value and effective source of skilled workforce. The programme of instruction normally includes the study of the underlying sciences and supporting materials and processes commonly used and services performed in the technology. A planned sequence of study and extensive knowledge in a field of specialization is required in technical education, including competency in the basic

communication skills and related general education (Wordu, 2011). Puyate (2011) buttressed that TVET is a field of study that provides opportunities for all students/learners from primary through higher education to develop an understanding about consumer, occupational, recreational, organizational, managerial, social, historical and cultural aspect of industry and technology as well as technical education.

Technical Education is concerned with that body of knowledge organized in a planned sequence of classroom and laboratory experience, usually at the post-secondary level to prepare pupils for a cluster of job opportunities in a specialized field of technology (Wordu, 2011). Technical education prepares one for the occupational area between the skilled craftsmen and the professional person, such as the engineer. National Board for Technical Education (NBTE, 1995) defines technical education as that aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge.

According to Tilak (2002), technical education if well planned and coordinated will guarantee graduates with varied skills because of changes in production processes resulting from technological advances, the nature of the demand for skills in terms of quantity and quality changes. Therefore, the effectiveness of the teaching and learning of technical education in tertiary institutions in Rivers State could be assured if adequate facilities are put in place.

Facilities are rooms, equipment and services that are provided for particular purpose in an institution (Pearson, 2000). Facilities are the operational inputs of every instructional program and they constitute elements that are necessary for teaching and learning e .g buildings, Laboratories, machinery, furniture and electrical fixtures. Infrastructure represents the empirical relevance of the totality of school environment for the realization of school business (Ehiametalor, 2001). Ehiametalor went further to identified facilities as the components of infrastructures such as: landscape, playgrounds, buildings, classrooms, library, laboratory blocks, sick bays, toilets, hostels, administrative blocks and so on, utilities such as electricity, pipe-borne water, and security facilities walls (fences) gates, telephone and information technology system. In consonance with the assertion of Ehiametalor, Ahmed (2010) noted that facilities developments are structures and services such as radio, sewage disposal, communication, road, power, telecommunication, solar energy, traffic control, transportation, electric power system and buildings (hostel, classrooms, workshop, library) needed for the effective operation of technical vocational education programme. It was noted that technical education facilities in tertiary institutions in Nigeria such as workshops, books, learning environment, tools and equipment, computer facilities and TV/Audio visual among others are inadequate (Akhuemonkhan & Raimi 2013). However, the researchers noted that in order to improve the facilities in technical education, there is need for collaboration of public and private sectors in providing financial resources, technology, technical know-how and strong policies in the teaching and learning of technical education in Rivers State in particular and Nigeria in general.

Public-Private Partnership (PPP) is a contractual agreement between a government agency or authority and a private sector entity that allows for greater participation in the delivery of public infrastructural projects (Ahmed, 2010). According to Public-Private Partnership Policy (2012), PPP is defined as a long-term procurement contract between the public and private sectors in which the proficiency of each party is focused in the designing, financing, building and operating an infrastructure, project or providing services through the appropriate sharing of resources, risks and rewards. The researchers sees Public Private Partnership as a generic term for the relationships formed between the private sector and public bodies often with the aim of introducing private sector resources and/or expertise in order to help provide and deliver public sector assets and services. That is why Ikechukwu and Najimu (2012) posited that public-private partnership paves the way for entities in the

private sector to perform their corporate social responsibilities by extending their services and financial cooperation for substantial development in the education sector.

In a separate view, Organization for Economic Cooperation and Development (OECD) (2013) deposited that the private sector can organize workplace learning through internships, apprenticeship, cooperative education and continuing education and training (CET) schemes. OECD went further to note that, internship is same as Students Industrial Work Experience Scheme (SIWES) in tertiary institutions where students go to work in enterprises in their expected career with little or no compensation for a period of six (6) to twelve (12) months. Public Private Partnership therefore bring many advantages to educational development such as delivery of quality educational services and facilities to the public At the same time, technical institutions would retain its responsibility to provide goods and services to the public at affordable rates (Aimola, 2010).

Statement of Problem

Technical education as a form of Technical Vocational Education and Training (TVET) ought to be a programme for the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. However, different studies had shown that technical education has been bedeviled by several challenges which had paralyzed the acquisition of salable skills in developing countries today including Nigeria. These challenges among others as identified by different include dilapidated infrastructures, inadequate workshop equipment, consumables, inadequate power supply. That is why Oryem-Origa (2005) postulated that about 60% of institutions of higher learning in Nigeria do not have workshop or laboratory space for technical education programme. No wonder Aimola (2010) calls for a judicious approach to decision making and underscores the need for a framework that enables private sectors to partner with public sectors to make reasonable returns on investments without diluting the standards and quality of services provided under public-private partnership arrangements in order to overhaul technical education Nigeria. Based on the above identified problem, the study was carried out to investigate improvement of facilities in technical and vocational education institutions for accelerated teaching and learning through public-private partnership in Nigeria.

Aims and Objectives of the Study

The main aim and objective of the study was to determine the facilities improvement in tertiary institutions for accelerated teaching and learning of TVET programmes through Public-Private Partnership in Rivers State, Nigeria. Specifically, the study investigates:

- 1) Workshop facilities improvement in tertiary institutions for accelerated teaching and learning of technical education programmes through Public-Private Partnership in Rivers State.
- 2) Library facilities improvement in tertiary institutions for accelerated teaching and learning of technical education programmes through Public-Private Partnership in Rivers State.

Research Questions

Two research questions guided the study;

1) How does workshop facilities improvement in tertiary institutions accelerate teaching and learning of technical education programmes through Public-Private Partnership in Rivers State?

2) How does library facilities improvement in tertiary institutions accelerate teaching and learning of technical education programmes through Public-Private Partnership in Rivers State?

Null Hypotheses

Two null hypotheses were formulated at 0.05 level of confidence.

Ho1: There is no significant difference between the mean responses of lecturers and students on how workshop facilities improvement in tertiary institutions accelerate teaching and learning of technical education programmes through Public-Private Partnership in Rivers State

Ho₂: There is no significant difference between the mean responses of lecturers and students on how library facilities improvement in tertiary institutions accelerate teaching and learning of technical education programmes through Public-Private Partnership in Rivers State.

Method

The study adopted descriptive research design and was carried out in Rivers State, Nigeria. The study population comprised of 1,704 respondents made up of 212 Lecturers and 1,492 students of Technical Education Departments in Rivers State University Port Harcourt, Ignatius Ajuru University of Education Port Harcourt and Federal College of Education (Technical) Omoku all in Rivers State. A sample of four hundred and fifty (450) respondents was used consisting of 112 lecturers and 338 students for the study. Two research questions were posed and two hypotheses formulated to guide the study. The instrument used for data collection was a 20-items structured questionnaire titled 'Improvement of Facilities in Tertiary Institutions for Accelerated Teaching and Learning of Technical Education Nigeria Programmes through Public-Private Partnership Rivers State, (IFTIATLTEPPP)'designed in the pattern of a 5-point Likert rating scale of Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DA) and Strongly Disagree (SDA) having numerical values of 5,4,3,2 and 1 respectively. The instrument was face and content validated by three experts in technical education department from Ignatius Ajuru University of Education Port Harcourt. In determining the reliability of the instrument, 10 Lecturers and 20 students of Vocational and Technology Education Department of Rivers State University, Port Harcourt who were not part of the sample were used and a reliability coefficient of 0.88 was established through Spearman Rank Order Correlation Coefficient after a test-retest method of 12 days interval. A total of 450 copies of the instrument administered to the respondents were retrieved and used for analysis. Mean and standard deviation were used in answering the research questions. So for the research questions, real limit of numbers was applied thus, it was decided that an item with a calculated mean value equal or greater than 3.50 (3.50 - 5.00) was regarded as agreed while an item was considered undecided if the mean rating was greater than or equal to 2.50 but less than 3.49 (2.50 - 3.49); whereas if the calculated mean of an item was less than or equal to 2.49 (0 - 2.49); such an item was regarded as disagreed. More so, standard deviation value close or wide apart was used to determine the homogeneity in opinion among the respondents. The hypotheses were tested at 0.05 level of significance using the t-test statistical tool; if the calculated value of (t-cal) is equal or less than the critical value of (t-crit), the hypothesis is accepted otherwise, rejected.

Results

Research Questions 1

How does workshop facilities improvement in tertiary institutions accelerate teaching and learning of technical education programmes through Public-Private Partnership in Rivers State?

Table 1
Mean and Standard Deviation of Respondents on how Workshop Facilities
Improvement in Tertiary Institutions Accelerate Teaching and Learning of Technical
Education Programmes through Public-Private Partnership in Rivers State

			Lecturers N=112			ents 88	
S/N	Items	\overline{X}_1		Remark	\overline{X}_2		Remark
1.	There is improved supply of work benches, machines and hand tools in tertiary institutions workshop through PPP for accelerated teaching/learning of technical education in Rivers State Nigeria	3.57	0.85	Agree	3.67	0.85	Agree
2.	There is improved provision of safety poster in tertiary institutions workshop through PPP for accelerated teaching/learning of technical education in Rivers State Nigeria	3.91	0.92	Agree	3.39	0.98	Undecided
3.	There is improved supply of consumables in tertiary institutions workshop through PPP for accelerated teaching/learning of technical education in Rivers State Nigeria	3.60	0.83	Agree	3.53	0.88	Agree
4.	There is improved supply of lathes in tertiary institutions workshop through PPP for accelerated teaching/learning of technical education in Rivers State Nigeria	3.56	0.88	Agree	3.50	0.92	Agree
5.	There is improved provision of power saws in tertiary institutions workshop through PPP for accelerated teaching/learning of technical education in Rivers State Nigeria	3.28	0.76	Undecided	3.39	0.88	Undecided
6.	There is improved supply of block molding machines in tertiary institutions workshop through PPP for accelerated teaching/learning of technical education in Rivers State Nigeria	3.45	0.72	Undecided	3.58	1.78	Agree
7.	There is improved provision of computer gadgets e.g projector, laptop/ in tertiary institutions workshop through PPP for accelerated teaching/learning of	3.65	0.78	Agree	3.46	1.07	Undecided

	technical education in Rivers State Nigeria						
8.	There is improved supply of	4.15	1.14	Agree	3.63	0.72	Agree
	functional milling machines in workshop in tertiary institutions						
	workshop through PPP for						
	accelerated teaching/learning of						
	technical education in Rivers State						
	Nigeria	2.50	0.04		2.62	0.00	
9.	There is improved provision of	3.59	0.94	Agree	3.63	0.82	Agree
	Theodolite in tertiary institutions						
	workshop through PPP for						
	accelerated teaching/learning of						
	technical education in Rivers State						
	Nigeria						
10.	There is improved provision of	3.80	1.06	Agree	3.78	0.63	Agree
	safety gadgets in the workshop in						
	tertiary institutions through PPP for						
	accelerated teaching/learning of						
	technical education in Rivers State						
	Nigeria		0.00			=	
	Grand Mean/SD	3.66	0.89	Agree	3.56	0.95	Agree

Source: Author's Field Work, 2021

Table 1 above, shows the mean scores of respondents on research question 1. From the Table, it is deduced that lecturers agreed with all items except item 5 and 6 with average mean scores of 3.66, while students on the other hand agreed with all the items posed except for item "5" which they have contrary view about with average mean score of 3.56. The Table shows that improvement of facilities in Technical Education workshop through public-private partnership accelerates teaching and learning in tertiary institutions in Rivers State, Nigeria.

Research Questions 2

How does library facilities improvement in tertiary institutions accelerate teaching and learning of technical education programmes through Public-Private Partnership in Rivers State?

Table 2
Mean and Standard Deviation of Respondents on how Library Facilities Improvement in Tertiary Institutions Accelerate Teaching and Learning of Technical Education Programmes through Public-Private Partnership in Rivers State

S/N	Items		Lecturers			Students		
		N=11	N=112			N=338		
		\overline{X}_1	SD_1	Remark	\overline{X}_1	SD_1	Remark	
11.	There is improved provision of current	4.05	1.18	Agree	3.89	1.19	Agree	
	related textbooks in tertiary institutions							
	library through PPP for accelerated							
	teaching/learning of technical education							
	in Rivers State Nigeria							
12.	There is improved provision of internet	3.86	1.22	Agree	3.90	0.98	Agree	

	facilities in tertiary institutions library						
	through PPP for accelerated						
	teaching/learning of technical education						
12	in Rivers State Nigeria	2 77	1.05	A	2.06	0.74	A
13.	There is improve supply of print media	3.77	1.25	Agree	3.96	0.74	Agree
	(magazines and journals) in tertiary institutions library through PPP for						
	institutions library through PPP for accelerated teaching/learning of						
	technical education in Rivers State						
	Nigeria Nigeria						
14.	There is improve provision of computers	3 67	1 29	Aoree	3 48	0.93	Disagree
17,	in tertiary institutions library through	3.07	1.2)	rigice	3.40	0.73	Disagree
	PPP for accelerated teaching/learning of						
	technical education in Rivers State						
	Nigeria						
15.	There is improve provision of	3.82	1.23	Agree	3.58	0.74	Agree
	educational television and videos in						
	tertiary institutions library through PPP						
	for accelerated teaching/learning of						
	technical education in Rivers State						
16	Nigeria There is improve provision of software	2 94	1 27	Agraa	2.09	0.52	Agraa
16.	There is improve provision of software in tertiary institution library through PPP	3.04	1.27	Agree	3.90	0.55	Agree
	for accelerated teaching/learning of						
	technical education in Rivers State						
	Nigeria						
17.	There is improve provision of journals in	3.56	1.14	Agree	3.50	0.46	Agree
	tertiary institutions library through PPP						
	for accelerated teaching/learning of						
	technical education in Rivers State						
1.0	Nigeria	4.00	0.05		2.66	1 00	
18.	There is improve provision of audio	4.32	0.95	Agree	3.66	1.22	Agree
	tapes in tertiary institution library through PPP for accelerated						
	teaching/learning of technical education						
	in Rivers State Nigeria						
19.	There is improve provision of mock up	3.88	0.63	Agree	3.95	0.58	Agree
	in tertiary institutions library through	0.00	0.02	1 -8-00	0.50	0.00	1 -8-00
	PPP for accelerated teaching/learning of						
	technical education in Rivers State						
	Nigeria						
20.	There is improve provision of book	3.68	1.65	Agree	4.16	1.21	Agree
	shelves in tertiary institutions library						
	through PPP for accelerated						
	teaching/learning of technical education						
Grar	in Rivers State Nigeria nd Mean/SD	3 85	1 12	Agree	3 81	0 86	Agree
Jiai	M MeansD	J.UJ	1,10	rigice	5.01	0.00	rigitt

Source: Author's Field Work, 2021

Table 2 above deduced that lecturers agreed with all items posed with an average mean scores of 3.85, while students on the other hand agreed with all the items posed except

for item "19" which they disagreed; with average mean score of 3.81. This indicates library facilities in tertiary institutions accelerates teaching and learning of TVET programmes through Public-Private Partnership in Rivers State, Nigeria

Test of Hypotheses

The test of the hypotheses was made in respect of appropriate data gathered and presented in Tables 3 and 4.

Hypothesis 1

There is no significant difference between the mean responses of lecturers and students on how workshop facilities improvement in tertiary institutions accelerate teaching and learning of technical education programmes through Public-Private Partnership in Rivers State

Table 3 t-test Analysis on how Workshop Facilities Improvement in Tertiary Institutions Accelerate Teaching and Learning of Technical Education Programmes through Public-Private Partnership in Rivers State

Respondents	N	\overline{X}	SD	df	P-Value -cal.	t-value	Decision
Lecturers	112	3.66	0.89	448	0.05	1.01	1.98
Students	338	3.56	0.95	Acce		1.01	1.76

Source: Author's Field Work, 2021

Table 3 above revealed that t-calculated (1.01) is less than t-value (1.98); thus, the null hypothesis stated above was accepted. Thus, revealed that the respondents agreed that improvement of workshop facilities through public-private partnership accelerates teaching and learning of technical education programmes in tertiary institutions in Rivers State, Nigeria.

Hypothesis 2

There is no significant difference between the mean responses of lecturers and students on how library facilities improvement in tertiary institutions accelerate teaching and learning of technical education programmes through Public-Private Partnership in Rivers State.

Table 4 t-test Analysis on how Library Facilities Improvement in Tertiary Institutions Accelerate Teaching and Learning of Technical Education Programmes through Public-Private Partnership in Rivers State

Respondents	N	\overline{X}	SD	df	P-Value	t-cal.	t-value	Decision
Lecturers	112	3.85	1.18	448	0.05	0.33	1.98	Accepted
Students	338	3.81	0.86					•

Source: Author's Field Work, 2021

Table 4 above revealed that t-calculated (0.33) is less than t-value (1.98); thus, the null hypothesis stated above was accepted. This implies that the respondents agreed that

improvement of library facilities through public-private partnership accelerates teaching and learning of technical education programmes in tertiary institutions in Rivers State, Nigeria.

Findings

The study exposed that for accelerated teaching and learning of technical education to be achieved, the needs for improvement in provision or supply of machines, tools, equipment, such as power saw, lathe, milling machines, theodolites, consumables, and adequate power supply for the operation of equipment as well as provision of current textbooks, educational tapes and videos, journal, print media (magazines and newspapers), computer, shelves, mockup, software and internet facilities through public-private partnership cannot be overflogged.

Discussion of Findings

Table 3 above revealed that t-calculated (1.34) is less than t-value (1.98); thus, the null hypothesis stated above was accepted. This means that respondents agreed that with improved facilities in technical education workshops, there will be an accelerated teaching and learning of technical education programmes in tertiary institutions in Rivers State, Nigeria. This result is backed up by the study of Atsumbe, Emmanuel, Igwe, and Atsumbe (2012) who lamented that most of the trainees are stuffed with theoretical knowledge at the expense of practical skill training which the hall mark of effective vocational education. This result further confirms the study of Okoye and Okwelle (2013) who maintained that Public-Private Partnership is inevitable due to the growing economic and financial difficulties which have made it impossible for many governments to pay for the rather high cost of technical education.

Table 4 above revealed that t-cal (0.33) is less than t-value (1.98); thus, the null hypothesis stated above is accepted. This means that the respondents agreed that improvement of library facilities through public-private partnership accelerates teaching and learning of technical education programmes in tertiary institutions in Rivers State, Nigeria. The finding is in consonance with Cohen and Hill (2010) who postulated that a well-equipped library is a storehouse of knowledge and a centre of learning activities, if properly organized and utilized. They further reiterated that library is an essential department of the school environment and helps to promote the growth of knowledge.

Conclusion

From the mean scores of respondents gathered from the investigation, the study concludes that public-private participation is pertinent in improving facilities in technical education. In view of the above findings, it is pertinent to note that PPP has become necessary for the following reasons: the widening infrastructure gap, increased demand for technical education, inadequate government funding, inadequate facilities and falling standard of education. It is a serious factor which must be encouraged or looked into if technical education must meet up the demand of the world of works.

Recommendations

From the result of the study, the following were suggested for an urgent recovery of technical education's lost glory. These are highlighted below;

- 1. Policy makers should enact laws that encourage intervention funding of technical education by government / donor agencies and ensure judicious use of such fund.
- **2.** Collaboration between technical education institutions and the private organizations should be strengthened in order to ascertain the needs of the institutions.

- **3.** Private-public sectors' partnership should be encouraged to ensure effective training programme necessary for acquisition of new technologies by technical education recipients undergoing the training.
- **4.** The study reaffirms the need for urgent replacement (improvement) of existing facilities in technical education workshop as they are functionally bad or obsolete.

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