



Availability and Adequacy of Resources for Effective Implementation of Techno-Vocational Education in Rivers State

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ABSTRACT

The study investigated availability and adequacy of resources for effective implementation of techno-vocational education in Rivers State. Two research questions and two corresponding hypotheses guided the study. The study adopted the descriptive survey design. A sample size of 180, representing 30% was drawn from a population of 541 using stratified sampling technique. A validated instrument titled “availability and adequacy of resources for techno-vocational education questionnaire” was used for data generation. The instrument yielded a reliability index of 0.72. Mean and standard deviation were used to answer the research questions, while the z-test was used to test the hypotheses. The study revealed that the major problem facing techno-vocational education are lack of teachers, uncommitted vocational instructors and unequipped workshops in vocational schools. The study concluded that adequate resources is important to ensure that the goals of techno-vocational education is achieved in Rivers State and Nigeria.

Introduction

Vocational education is any form of education whose primary purpose is to prepare persons for employment in recognized occupations (Okoro (1993) as cited in Ebete, 2015). Techno-vocational education according to Ebete (2015:352) is a “comprehensive term that refers to technical, technological and vocational education. According to Ebete, it is an all-embracing education that provides formal training of persons to become technicians, or technologist in different occupations. This particular type of education has a primary purpose of providing skills to persons.

Vocational institutions need skilled manpower of various categories needed in their diverse qualities to pursue the goals of producing skilled labour force needed for economic growth and development. It therefore implies that such instructors in vocational institutions must be professionally trained to be properly equipped for the task of producing the skilled manpower needed in the various sectors of the national economy.

Federal Republic of Nigeria (2004:39-41) stipulates: “all teachers in educational institutions (vocational schools inclusive) shall be professionally trained... And efforts towards the improvement of quality education at the various level of education shall include the appointment of academically and professionally qualified persons as teachers...” The policy provision for teacher recruitment was more categorical on the issue and states that: “the minimum qualification for entry into teaching profession shall be the Nigerian certificate in Education (NCE) (FRN, 2004:39).

Research evidence from study by Efajemue and Lilly (2007) reveals that the problems that manifested in the implementation of vocational education in Nigeria among others include uncommitted and incompetent educational instructors. This finding is consistent with earlier study by Ivowi (2003) which found that out of fifteen (15) subject areas investigated in educational institutions, teachers in seven subject areas which included auto mechanic, biology, chemistry, food and nutrition, physics, technical drawing and typewriting were found not qualified.

The assessment report of the Nation Board for Technical Education (NBTE) quoted in Olumese (2004) corroborates the above findings. According to the report, of the ninety-one (91) technical colleges only forty-nine (49) or (8.9%) have qualified teachers. The poor quality of instructors as revealed by the NBTE assessment and other related findings have serious implications for quality vocational programme implementation. As rightly observed by Puyate (2003), the engagement of unqualified teachers in vocational schools had negative and unpleasant effects on students and is responsible for poor performance in subjects in NABTE examinations.

In a similar study by Olumeze (2004) on “vocational and technical education in Nigeria: Issues, problems and prospects”, it was discovered that major problem associated with vocational education in Nigeria was the lack of technical teachers and instructors. As observed by Zuofa (2007:11), it is a truism that the technological development of a nation depends on the available technical know-how, the rudiment of which is a function of the quantity and quality of available technical education instructors.

In any technological development efforts, technical colleges and similar institutions play crucial role by providing the much-needed skill manpower. It is an indisputable fact that scientific inventions and designs cannot be translated into reality without the invaluable contributions of well qualified technical instructors. This can only be achieved through well-staffed technical institutions (Zuofa, 2007).

In a study on "Repositioning polytechnic/technical education for sustainable development" by Dawodu (2007), it was found that most lecturers of the polytechnic do not possess the relevant academic and professional qualifications. Accordingly, the study observed that the National Board for Technical Education (NBTE) recommendation that the structure of academic staff should be in the ratio of 20% chief lecturers, 25% senior lecturers and 55% lectureship grades with the provision that at least a department should have a chief lecturer/principal lecturer is far from being achieved. It is for this reasons that the products of the polytechnic have continuously declined in quality.

The failure of the polytechnic and related institutions to hire the required number of qualified personnel also led to a lopsided admission of students into programme of study. The policy framework provides that admission into polytechnic shall be broad based in the ratio of 70:30 into the technology and business-related courses (FRN, 2004:42). This is flagrantly violated. The observation of Dawodu (2007) is important here:

It is instructive to note that most polytechnic/colleges of technology are not adhering to the above structure. At best, the above structure has been followed between 45:55. Also, the National Board for Technical Education (NBTE) in a recent study revealed that only 25 percent of polytechnic graduates offer technical course (p. 4).

Innovations in the revised edition of the National Policy on Education makes it mandatory for lecturers to be computer literate to make polytechnics ICT compliant or as a tool for effective delivery of lectures. Unfortunately, most lecturers in the polytechnic and technical college are still computer illiterate. Since no one can give out what he does not have, computer aided studies cannot take firm root in the polytechnics/technical colleges (Dawodu, 2007).

The National Board for Technical Education (NBTE) and the National Policy on Education specified staff-student ratio of 1:40 and 1:35 respectively. Research evidence shows that this is far from being achieved. The situation is aptly described by Dawodu (2007:7) when he observed as follows: "There is hardly any technical institutions that comply to this specification. It is a common sight in polytechnics to see more than 100/150 students against a lecturer, with more students standing to listen to the lecturers through the windows".

Scholars agree that the teaching of technical/vocational education cannot be possible if necessary and adequate provision of human resources is not given priority attention. However Igbemi (2003) had observed that lack of qualified human resources has been a common problem to vocational education programs and this has restricted most of the vocational programmes from performing its roles effectively. In a study on the problems facing the effecting teaching of home economics, Igbemi (2007) had pointed out that many teachers who teach home economics are not qualified to teach even though they possess first degrees. Accordingly, since these teachers are not home economics teachers, they cannot handle the teaching of home economics effectively. In an earlier study by Nwokomah (2001:100), it has been observed that "lack of successful experience in the qualification of skills and knowledge to the operating and processes which most of our technical instructors and teachers undertake to teach apparently constitute another major barrier to effective vocational technical education in Nigeria".

New policies contained in the revised edition of the National Policy on Education proposed a system of education that would make students more marketable by equipping them with skills for a wide range of employment opportunities. It has been noted by Moja (2007:19) that: "the implementation of this objective had become problematic due to the fact that the system is faced with shortage of teachers, in particular teachers with qualification and experience to teach vocational subjects". It was also reported that disparities exist in the contribution of qualified guidance counselors for vocational courses. The quality of services provided by the guidance counselors is also questionable due to work overload. Because of lack of personnel, many of them also have teaching responsibilities that limit the amount of time available for counseling services (Moja, 2007).

The National Board for Technical Education (1994) adopted an integrated approach to vocational and technical education. The underlying philosophy was based on the belief that a broad introduction to vocational and technical education was better than the compartmentalized single subject approach. Reports emanating from NBTE indicate that teachers ever understood the integrated approach to teaching pre-vocational subjects and there was no support mechanism to assist them in the implementation of the transition from single subject approach to the composite teaching approach (Moja, 2000). The end result of this has been that the overall implementation of the terminal objective has not been successful.

Research evidence from a study by Oti (1990) as cited in Adiele (2008) reveal that only 24 percent of the technical drawing teachers in vocational schools are Nigerians, the rest are foreigners. Though this study was conducted far back 1990, there are no indications that the situation has improved. This finding confirms the lack of personnel in the system and in the subject areas.

From the foregoing, it is evident that qualified personnel are not attracted into vocational institutions. Poor remuneration and inadequate incentives have been attributed to this. It is also for this reason that students are discouraged from vocational courses. In view of this Nwokolo (1993), Tobi and Uneze (2000) as cited in Adiele (2008) has noted that vocational school teachers are not satisfied with their jobs and would not like to put in their best and look out for any slightest opportunity to draft to the industry.

Whereas well-qualified and trained teachers are needed for vocational programme implementation, they (the teachers) still need adequate facilities a good condition to make their performance yield result in terms of teaching and learning effort. This section, presents a review of literature on the status of existing facilities and equipment in technical/vocational institution.

Study by Alioor and Iloejeme (2003) revealed the following situation among others in vocational schools in Nigeria:

1. That the training environment for vocational education is not a replica of the environment they must subsequently work;
2. The tools, machines and equipment used in training are never the same with those in the occupation itself.

Because of the above conditions, there is no clear relationship between job preparation in vocational schools and on the job activities, which is the mission of vocational education. This finding has serious implications for effective implementation of vocational education programmes. It exposes the lack of relevant training equipment and facilities that will really enable the students function in job activities that awaits them after graduation.

In a similar study by Olumeze (2004) it was found that vocational institutions in Nigeria were faced with the problems of lack of adequate workshop/facilities and equipment, lack of maintenance culture and the absence of vocation education and industry collaborations. This finding is in agreement with empirical study by Oghuvbu and Akpotu as cited in Adiele (2008) on “the factors affecting the attainment of the objectives of technical school education in Nigeria”. Oghuvbu and Akpotu study revealed among others that inadequate instructional facilities: poor school plant, and poor equipment affect ted the attainment of the objectives of technical school education. It is implied by these findings that planners and implementers of vocational education programmes have not given adequate consideration to the equipment needed for the training of skilled technicians. This is bound to have consequences on the quality of the product of the technical colleges and more importantly on the attainment of technological development of the nation, bearing in mind that the technical colleges form the base for nurturing technological breakthrough.

In a study by Dawodu (2007), it was observed that:

The inadequacy of budget provision leads to embarrassing shortage of teaching materials. It also leads to decay of educational assets e.g. buildings, infrastructure, equipment with no hope of putting them in shape or outright replacement. The maintenance culture is almost absent in the Nigerian context (p. 3).

This statement reveals that in polytechnic and technical institutions, there I a lack of concrete and authoritative support for replacement of obsolete resources and facilities; persistent lack of appropriate and necessary infrastructure.

Research evidence also shows that critical educational resources were generally absent. These include: papers, journals and study guides, visual charts, projectors, illustrative diagrams, slides and transparencies; audiovisuals, slides, tape, films, television, video and multimedia. Others are static/display, multi-purpose boards, bulletin boards, magnetic boards, exhibition; electronics such as radio, computer, television internet; and lack of basic technical/engineering equipment and tools (Dawodu, 2007).

The present conditions are revealed above will have negative impact on the quality of technical programmes and this will have direct impact on the quality of the graduate of vocational schools. The poor facilities situation in polytechnics is further captured in the observations made by Dawodu (2008:5): “In some polytechnics around the country, computer related courses like Computer Aided Design (CAD) and Computer-Aided Management (CAM) have not been effectively taught partly because of lack of relevant infrastructure or workstations”. The foregoing research evidence shows that in spite of the overriding importance of facilities and equipment in increasing the efficiency and effectiveness of the learning process, not much is done to guarantee their regular provision. These indeed constitute a major setback to the realization of the goals of vocational education in Nigeria. It is obvious that practical training in vocational education is central to self-reliance and employability of the products. It must be noted that it is the availability of facilities and equipment that will make technical education more functional and meaningful to societal need.

Zuofa in a lead paper on “Refocusing Education of Relevance and Sustainable National Development” had observed: “Government at the national and state levels have continued to maintain several technical colleges that are today ill-equipped, ilkl-staffed and badly positioned to pursue their primary assignment” (Zuofa, 2007: 12). Zuofa had gone further to describe the technical/vocational colleges as characterized by very poor enrolment due to reckless neglect by the “responsible owners”, general rot; policy inconsistency; inadequate and obsolete facilities, and poor staffing. These features found in technical/vocational schools have resulted in general loos of interest in technical education by the teaming youths.

Zuofa’s observation corroborates the National Board for Technical Education (NTBE) report of 1991, which showed that vocational schools were characterized by inadequate equipment and facilities. The NTBE report also observed that this phenomenon was responsible for the high failure rate in the West African School Certificate Technical Examination (Puyate, 2003). The poor performance of students in vocational subjects as shown in the NTBE report is an indication that something is wrong with the way the subjects are taught or in the equipment used in teaching.

Similarly, in a study by Adiele (2005) which diagnosed buildings, equipment and facilities in Government Technical College, Port Harcourt, it was found that out of the eleven (11) departments examined, equipment and facilities were non functional in six (6) departments, four (4) were functional, while one (1) functioned minimally. The study further revealed that in the radio-television department, of the 314 facilities and equipment needed to keep the department functional, only 24 were available. In the electrical department, out of the 25 equipment needed, only 15 were available, of this number, 4 were completely bad and only 11 were in good condition. In the furniture department, 10 equipment were seen and the 10 were out of use. All the furniture works were manually done. The study revealed that facilities condition was worst in the auto mechanic workshop where out of 31 equipment needed, only 5 were available. And those five were minor tools like spanners.

Statement of the Problem

Optimal goals or stated objectives attainment is the pursuit of every educational institution. And in order to achieve or attain the goals or stated objectives of any educational programmes, there is the need for adequate provision of the required or needed resources. There is also the need to examine the status

of the available resources for the implementation of educational programmes. But it seems that in Nigeria, Rivers State in particular, resources for the implementation of educational programmes, particularly, techno-vocational education are not adequately available; or the status of the available resources may not be in good condition. There is therefore the need to look at availability and the study of resources for the implementation of techno-vocational education in Rivers State.

Research Questions

1. How adequate are the available teachers or workshop instructors in techno-vocational schools in Rivers State?
2. What is the status of vocational workshops in techno-vocational schools in Rivers State?

Hypotheses

1. There is no significant difference between the mean opinions of rural and urban principals on the adequacy and availability of teachers and workshop instructors in techno-vocational schools in Rivers State.
2. There is no significant difference between the mean opinions of rural and urban principals on the status of vocational workshops in techno-vocational schools in Rivers State.

Methodology

The design of the study is descriptive survey design. The population consist of all the 266 principals of junior secondary schools, 247 principals of senior secondary schools, 5 principals of technical colleges and 23 directors in in Rivers State. The population is therefore 541. The sample size is 18, representing 30% o the population. The instrument for the study is a questionnaire titled: Availability and Adequacy of Resources for Techno-Vocational Education Questionnaire (AARTVEQ). Validity was ascertained using professional critique of a specialist in measurement and evaluation. Reliability was obtained through test re-test method. Reliability index was obtained at 0.72. Instrument was administered by the researcher with the help of research assistants. Mean and standard deviation were used to answer the research questions, while Z-test was used to test the hypotheses.

Results

Research Question 1:

How adequate are the available teachers or workshop instructors in techno-vocational schools in Rivers State?

Table 1: Mean and standard deviation of rural and urban principals on the adequacy of the available teachers and workshop instructors in techno-vocational schools in Rivers State.

S/N		Rural principals		Urban principals		\bar{X} \bar{X}	Decision
		\bar{X}	SD	\bar{X}	SD		
1.	Teachers are not available in techno-vocational schools in Rivers State.	2.86	.90	2.94	.92	2.90	Agree
2.	The available teachers are not adequate.	3.04	.94	3.06	.96	3.05	Agree
3.	Teachers in techno-vocational schools have teaching qualification from bachelor degrees in their various discipline.	3.00	.93	3.04	.94	3.02	Agree
4.	Techno-vocational schools lack competent vocational instructors.	3.10	.98	3.08	.97	3.09	Agree
5.	The number of instructors are not enough to meet the number of students.	2.89	.91	3.00	.93	2.94	Agree
6.	The workshop instructors are not professionally trained.	3.12	.99	3.10	.98	3.11	Agree
	Aggregate Mean	3.00		3.03			

The data in table one above revealed that the assessed variables are all above the criterion mean of 2.50. This portrays that qualified teachers and workshop instructors are not available in techno-vocational schools in Rivers State.

Research Question 2:

What is the status of vocational workshops in techno-vocational schools in Rivers State?

Table 1: Mean and standard deviation of rural and urban principals on the status vocational workshops in techno-vocational schools in Rivers State.

S/N		Rural principals		Urban principals		\bar{X} \bar{X}	Decision
		\bar{X}	SD	\bar{X}	SD		
1.	Techno-vocational schools are not provided with enough classroom.	2.85	.89	2.93	.91	.90	Agree
2.	Techno-vocational schools are not provided with good workshops.	3.03	.93	3.04	.94	.93	Agree
3.	The workshops provided in techno-vocational schools are not adequately equipped with techno-vocational instructional materials.	2.99	.92	3.03	.93	.92	Agree
4.	The conditions of existing workshops are very bad.	3.09	.97	3.07	.96	.96	Agree
5.	There is the need for more workshops in techno-vocational schools.	2.88	.90	2.98	.90	.90	Agree
6.	There are no workshops in some vocational schools.	3.11	.98	3.09	.98	.98	Agree
	Aggregate Mean	2.99		3.02			

The data in table 2 indicates that the assessed mean scores of the variables are above the criterion mean of 2.50. This reveals that there no workshops in techno-vocational schools, the available ones are not equipped, and they lack techno-vocational instructional materials.

Hypothesis I

There is no significant difference between the mean opinion of rural and urban principals on the adequacy and availability of teachers and workshop instructors in techno-vocational schools in Rivers State.

Table 4: Z-test analysis for the significant difference between the mean opinion of rural and urban principals on the adequacy and availability of teachers and workshop instructors in techno-vocational schools in Rivers State.

Variables	N	\bar{X}	SD	df	Z-calculated	z-critical	Decision
Rural Principals	230	3.00	.94	539	0.48	± 1.96	HO ₁
Urban Principals	311	3.03	.95				Accepted

Data in table 3 revealed that the Z-calculated value of 0.48 is less than the Z-critical value of ± 1.96 at 0.05 significant level. Since the Z-calculated value is less than the Z-critical value, the hypotheses is accepted. There is therefore, no significant difference between the mean opinion of rural and urban principals on the adequacy and availability of teachers and workshop instructors in techno-vocational schools in Rivers State.

Hypothesis 2

There is no significant difference between the mean opinions of rural and urban principals on the status of vocational workshops in techno-vocational schools in Rivers State.

Table 4: Z-test analysis for the significant difference between the mean opinions of rural and urban principals on the status of vocational workshops in techno-vocational schools in Rivers State.

Variables	N	\bar{X}	SD	df	Z-calculated	z-critical	Decision
Rural Principals	230	2.99	.93	539	0.52	± 1.96	HO ₁
Urban Principals	311	3.02	.93				Accepted

Data in table 4 indicates that the Z-calculated value of 0.52 is less than the Z-critical value of ± 1.96 at 0.05 significant level. The Z-calculated is less than the Z-critical so the hypothesis is accepted. There is no significant difference between the mean opinions of rural and urban principals on the status of vocational workshops in techno-vocational schools in Rivers State.

Discussion

The findings of research question 1 revealed that no available teachers and workshop instructors in techno-vocational schools. There are no competent vocational instructors and even the available ones are not enough. This finding agrees with Efehemue and Lilly (2007), Olumeze (2004) when they noted that the major problem that manifested or associated with vocational education in Nigeria was lack of teachers and vocational instructors that are uncommitted and incompetent. Test of hypothesis one was accepted that there is no significant difference between the mean opinion of rural and urban principals on the adequacy and availability of teachers and workshop instructors in techno-vocational schools in Rivers State.

The findings of research question 2 revealed that there are no workshops in techno-vocational schools. And, the available ones are not equipped as they lack techno-vocational instructional materials. The findings agree with Olumeze (2004) who found that vocational schools in Nigeria were faced with the problems of lack of adequate workshop/facilities and equipment, lack of maintenance culture and the absence of vocational education and industry collaborations.

Recommendations

1. Rivers state government should ensure that teachers are provided in techno-vocational schools in Rivers State.
2. Rivers State government should ensure that vocational workshop instructors are provided in techno-vocational schools in Rivers State.
3. Functional vocational workshops should be provided in techno-vocational schools in Rivers State.
4. Rivers State government should provide appropriate maintenance culture to the few existing facilities in techno-vocational schools in Rivers State.

Conclusion

Adequate provision of resources is important to ensure that the goals of techno-vocational education is achieved in Rivers State and Nigeria.

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