Infrastructural Challenges to Effective TVE Curriculum Implementation in Tertiary Institutions in Edo State

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Abstract

The need for enhanced skills acquisition by students of technical and vocational education (TVE) for success in employment on graduation necessitated this study to determine the infrastructural challenges to effective implementation of the curriculum in tertiary institutions in Edo State. One research question guided the study and three null hypotheseswere tested. The population consisted of all 92 TVE lecturers from all three tertiary institutions in the area. The entire population was studied without sampling because the size was not too large. Instrument used for data collection was a five-point rating scale questionnaire containing 15 items which was validated by three experts in TVE and educational measurement and evaluation. The instrument was pilot tested to determine its reliability using the internal consistency method with Cronbach alpha and a reliability coefficient value of 0.89 was obtained. The arithmetic mean and standard deviation were used to answer the research question and determine the homogeneity of the respondents' mean ratings while t-test and analysis of variance (ANOVA) were used to test the null hypotheses at 0.05 level of significance. Findings of the study revealed that inadequate infrastructural facilities was a challenge to effective implementation of TVE curriculum in tertiary institution in Edo State. Furthermore, it was found that the respondents did not differ significantly in their mean ratings as a result of educational qualification, teaching experience and ownership of their institutions. Based on the findings of the study, the researchers concluded that the federal and state governments do not fund the institutions adequately to facilitate the provision of relevant infrastructural facilities for effective implementation of the curriculum. It was, therefore, recommended that key stakeholders in TVE curriculum implementation should persuade the government to increase funding for the programme while management of the institutions should ensure that such funds are judiciously applied to facilitate adequate skills acquisition by students for success in employment on graduation.

Keywords: *Infrastructural challenges, Technical and Vocational Education (TVE), Curriculum implementation.*

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Background to the Study

Technical Vocational Education (TVE) as a comprehensive term which encompasses the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge related to occupations in various sectors of economic and social life. According to Mureithi (2008), the goals of TVE in Nigeria are to develop an effective, coordinated and harmonized system that is capable of producing quality skilled human resource with the right attitude and values as required for growth and prosperity of various sectors of the economy. Richard (2016) also defined technical education as an instruction in the principles of science and art applicable to industries, and in the application of special branches of science and art to specific industries or employments. Richard further emphasize that for technical education to be complete it must provide both theory and practice. This definition further identifies two kinds of education and training namely technological and technical to the broad classes of occupations, for example, unskilled occupations, semi-skilled occupations, skilled craftsmen and technicians, professional and managerial occupations. The Federal Republic of Nigeria (FRN, 2013) articulated the two aims of technical and vocational education as follows:

1. To give training and impart the necessary skills leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising and self-reliant.
2. To enable Nigerian young men and women to have an intelligent understanding of the increasing complexity of technology.

These aims and objectives points to the fact that empowering youths with relevant skills and craft inline with the current global trend is necessary in order to foster the growth of national economy with the view of integrating and preserving local multicultural craft and trade which Nigeria in particular Edo State is known for in terms of production of arts and brass through local crafting and vocational practices.

Curriculum Implementation

The process of curriculum implementation is a complex one. A curriculum remains simply a package if it is not implemented effectively to achieve the intended objectives. The word curriculum was coined from the Latin word "currere" meaning "race course", referring to the course of deeds and experiences through which children grow to become mature adults (Collins, 2018). Blenkin (2012) defined curriculum as a body of knowledge contents and or subjects. That is, the curriculum is the process by which knowledge and skills are transmitted or delivered to learners by the most effective methods that can be devised. Implementation connotes operationalization of well-articulated and well-intentioned ideas packed as theory. Garba (2004) described curriculum implementation as putting the curriculum into work for the achievement of the goals for which the curriculum is designed. In this case, teachers or lecturers are the key players as their practices can enhance effective implementation or mar it.

Statement of the Problem

In ancient times, Edo indigenes were renowned for the production of the art of brass and ivory which involved crafts like carpentry, brass casting, leatherwork, black smithing and weaving through the apprenticeship system. However, from the twentieth century, all these products that have made the state popular and enormously contributed to its development began to

disappear because of competition with European products. As a result, many of the youths chose to venture into TVE in order to acquire training with technological equipment and machinery that will help them revive and preserve the Edo heritage. Unfortunately, the dreams of these youths appear not to be coming through and some of them are disappointed because they are not getting the needed skills through the enrollment of TVE programmes. This suggests that the curriculum implementation is not as effective as desired to develop relevant local and technological skills in the students. Consequently, some of the youths are dropping out of school and engaging in different anti-social activities which not only affect the socio-economic development of the state but also make it disreputable within and outside Nigeria.

This ugly situation may not be unconnected with the failure of the TVE programme to equip the youths with requisite technological skills for gainful employment in the popular trades of their ancestors. The problem of the study is that the actual challenges to effective TVE curriculum implementation in tertiary institutions in Edo State appear not to have been documented. This makes this study imperative to provide empirical evidence for objective remedial actions by relevant stakeholders in order to restore the dignity of the state and her indigenes. If this study is not conducted, the challenges to effective TVE curriculum implementation in tertiary institutions in Edo State may not be clear to those who are expected to be pro-active in reversing the downturn of the state.

Purpose of the study
The main purpose of the study was to determine infrastructural facilities, was a challenge to effective TVE curriculum implementation in tertiary institutions in Edo State.

Research Question
1. What are infrastructural challenges facing effective TVE curriculum implementation in tertiary institutions in Edo State?

Hypotheses
1. There is no significant difference between respondents mean ratings on infrastructural challenges facing TVE curriculum implementation in tertiary institutions in Edo state as a result of the level of education (Master's Degree/PhD).
2. Respondents do not differ significantly in their mean on infrastructural challenges facing TVE curriculum implementation in tertiary institutions in Edo state based on experience (1-5yrs/6-10yrs/above 10yrs).
3. There is no significant difference between respondents mean ratings on infrastructural challenges facing TVE curriculum implementation in tertiary institutions in Edo state as a result of institution ownership (federal/state).

Method
The study adopted descriptive survey research design. According to Nwankwo (2011), descriptive survey is concerned with using questionnaire or interview to collect data from a sample drawn from a given population in order to describe certain attributes or features of the population as they are at a particular time. Descriptive survey was judged suitable for this study

because the researchers collected data from a population of TVE lecturers using a questionnaire to determine the challenges facing the curriculum implementation in their institutions.

The study was conducted in Edo State which is one of the states in south-south Nigeria. Edo State is bounded by Kogi State to the northeast and east, Anambra State to the east, Delta State to the southeast and south, and Ondo State to the west and northwest. The Niger River flows along the state's eastern boundary and the capital is Benin City which is the largest urban centre. Edo State lies at elevations between 500 feet (150 m) in the south and more than 1,800 feet (550 m) in the north. According to Mckenna (2019), tropical rain forest covers most of the area. The state is inhabited largely by four major ethnic groups; the Bini, Esan, Owan and Estako. The region is known for its diversity in languages, with Bini constituting (57.14%) while Esan (17.14%), Etsako (12.19%), Owan (7.43%), and Akoko Edo (5.70%). The National Population Commission (NPC, 2006) recorded the population of the state to be approximately eight million. In spite of the diversity in language and culture, the central vocation which made Edo State the centre of tourist attraction is mainly the making of craft, art and brass.

This contributed enormously to the socio-economic growth and revenue drive of the state in the past and serves as a common ground and language for the diverse culture and language for the indigenes. These vocations foster unity among the multi-cultural indigenes especially the youth as they seek former education in tertiary institution thereby projecting the state into national and western limelight. The choice of Edo State for the study was informed by the fact that popular crafts that provided employment and income for the people in the past are currently being neglected while the youths who undergo training in TVE institutions generally appear to be unqualified for paid or self-employment. It is the view of the researchers that if the TVE curriculum is effectively implemented in the institutions, the youths will acquire the known crafts and arts with technical and technological skills for paid or self-employment and self-reliance. This will benefit the government and people of the state by reducing the level of unemployment and its associated vices.

The population for this study was made up all 92 TVE lecturers in technical and vocational education departments in all the tertiary institutions offering the programme in Edo State. The entire population was studied without sampling because the size was small and manageable. The instrument for data collection was a structured questionnaire titled "Questionnaire on infrastructural challenges facing TVE curriculum implementation (QICFTVECI)" developed by the researchers based on insight gained from the related literature reviewed. The instrument has two main sections; Sections A and B. Section A contained three items on the demographic data of the respondents while Section B contained 15 items on a five-point rating scale of strongly agree (SA), agree (A), no opinion (NO), disagree (D) and strongly disagree (SD).

The instrument was validated by three experts in technical education and educational measurement and evaluation from the researchers' institution. Changes suggested by the

experts were applied in producing the final version of the instrument used for the study. Internal consistency method was used to establish the reliability of the instrument. It was administered to 10 TVE lecturers from Delta State University, Abraka outside the area of the study and reliability coefficient value of 0.89 was obtained using Cronbach alpha. The high reliability coefficient value indicated that the instrument was reliable as recommended by Nwankwo (2011) that an instrument that has coefficient value of 0.70 and above is reliable. The instrument was administered to the lecturers in their institutions with the assistance of three lecturers. The researchers visited the institutions and delivered copies of the instrument to the assistants who distributed to their colleagues and revisited for retrieval as agreed with them within five working days.

The arithmetic mean and standard deviation were used to analyze data in order to answer the research question and determine the homogeneity of the respondents' mean ratings. Decision on the research question was based on the cluster mean relative to the cut off mean score of 3.00. Cluster mean score of 3.00 and above means that the respondents agreed that TVE curriculum implementation in the institutions was facing infrastructural challenge while cluster mean score less than 3.00 means that the respondents disagreed. The inferential statistics of t-test and analysis of variance (ANOVA) were used to test the null hypotheses at 0.05 level of significance. A null hypothesis was not rejected where the calculated t-value or f-ratio was less than the critical t-value or f-ratio and rejected where the calculated t-value or f-ratio is equal or greater than the critical t-value or f-ratio.

Results

Table 1: Respondents' mean ratings on infrastructural challenges to effective TVE Curriculum implementation in tertiary institutions in Edo State

S/N	Items on Infrastructural Challenges	X	Remarks
1	Inadequate classrooms space	4.62	Agree
2	Poorly lighted and ventilated workshops	4.42	Agree
3	Non-conformity of workshop structural design to standard	4.29	Agree
4	Availability of safety accident prevention and protective equipment (PPE)	2.23	Disagree
5	Computerization of all machinery in the workshop	1.45	Disagree
6	Obsolete machinery	3.92	Agree
7	Routine maintenance of machinery	2.32	Disagree
8	Lack of coherence in workshop activities	3.55	Agree
9	Lack of operational manuals for workshop equipment	4.04	Agree
10	Machinery not satisfying training purpose and requirements	3.99	Agree
11	Prompt replacement of broken or faulty machinery	1.25	Disagree
12	Overstretching of workshop equipment due to inadequacy	3.76	Agree
13	Lack of power supply for workshop activities	4.26	Agree
14	Monopolization of workshop by some departments/program	4.63	Agree
15	Constant use of workshop for commercial activities thus limits access for class practice	4.58	Agree
	Cluster Mean	**3.55**	**Agree**

Table 1 shows that the mean scores for 11 out of the 15 items on the infrastructural challenges range from 3.55 to 4.63 which means that the respondents agreed that they constitute challenges to effective TVE curriculum implementation in tertiary institutions in Edo State. The remaining four items have mean scores ranging from 1.25 to 2.32 which mean that the respondents disagreed with them. However, the cluster mean score of 3.55 shows that the respondents agreed that effective TVE curriculum implementation in tertiary institutions in Edo State is constrained by infrastructural challenges.

Table 2: t-Test analysis of the significant difference in the mean ratings between lecturers with M.Sc and those with PhD on infrastructural challenges to effective TVE curriculum implementation in tertiary institutions in Edo State

Variables	N	X	SD	df	p-value	α-level	Remarks
MSc	45	3.71	0.27				
				91	0.168	0.05	NS
PhD	47	3.79	0.29				

Table 2 shows that at 91 degrees of freedom, the p-value is 0.168 which is greater than the alpha level of 0.05 (0.70 > 0.05). This means that there is no significant difference in respondents' mean ratings on infrastructural challenges to effective TVE curriculum implementation in tertiary institutions in Edo State based on level of education (MSc, and PhD). Therefore, the null hypothesis was not rejected.

Table 3: ANOVA summary on significant difference in respondents' mean ratings on infrastructural challenges to effective TVE curriculum implementation in tertiary institutions in Edo State based on experience

Sources of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.340	2	.170	2.180	.119
Within Groups	6.935	89	.078		
Total	**7.275**	**91**			**NS**

Table 3 shows that at 89 degrees of freedom, the p-value is 0.119 which is greater than the alpha level of 0.05 (0.119>0.05). This means that there is no significant difference in respondents' mean ratings on infrastructural challenges to effective TVE curriculum implementation in tertiary institutions in Edo State based on experience (0-5years, 6-10 years and 10 years and above). Therefore, the null hypothesis was not rejected.

Table 4: t-Test analysis of no significant difference in the mean ratings lecturers from federal and state owned institutions in Edo State on infrastructural challenges to effective TVE curriculum implementation

Variables	N	X	SD	df	p-value	α-level	Remarks
State	55	3.72	0.28				
				91	0.179	0.05	NS
Federal	37	3.80	0.29				

Table 4 shows that at 91 degrees of freedom, the p-value is 0.179 which is greater than the alpha level of 0.05 (0.179 > 0.05). This means that there is no significant difference in respondents' mean ratings on infrastructural challenges to effective TVE curriculum implementation in tertiary institutions in Edo State based on institution ownership (Federal/State). Therefore, the null hypothesis was not rejected.

Discussion
This finding revealed that TVE lecturers agreed that effective TVE curriculum implementation in tertiary institutions in Edo State is being constrained by infrastructural challenges. This mean that the programme lacks such basic infrastructural requirements as adequate classroom space and spacious, well lighted and ventilated workshops among others. This finding supports that of Usman (2013), that historical reasons that hinder the development of TVE in the Nigeria include inadequate infrastructural facilities due to inadequate funds allocation. It is important to note that infrastructural facilities such as classroom blocks, laboratories and workshops require funds to construct and that a situation like Nigeria's where funding for education generally and TVE in particular is grossly inadequate, it will be impossible to provide them for curriculum implementation.

The finding also revealed that there is no significant difference between respondents' mean ratings on infrastructural challenges to TVE curriculum implementation in tertiary institutions in Edo state as a result of the level of education (Master's Degree/PhD). This finding disagrees with that of Raji (2016), that there is a significant difference between respondents' mean ratings on infrastructural obstacles to the enhancement of technical education in Pakistan based on level of education. This difference could be as a result of geographical location, the subjects used in the studies and government's policies on TVE curriculum implementation.

This finding also revealed that the respondents do not differ significantly in their mean ratings on infrastructural challenges to effective TVE curriculum implementation in tertiary institutions in Edo state based on experience (1-5yrs/6-10yrs/above 10yrs). This finding supports that of Usman (2013) that respondents did not significantly differ in their mean ratings on infrastructural problems for the development of TVE in Katsina State based on years of experience.

Finally, the finding revealed that there was no significant difference between respondents mean ratings on infrastructural challenges to effective TVE curriculum implementation in tertiary institutions in Edo state as a result of institution ownership (federal/state). This implies that institution ownership did not influence TVE lecturers' ratings on infrastructural challenges of TVE curriculum implementation. This finding agrees with Usman (2013) that respondents did not significantly differ in their mean ratings on infrastructural problems for the development of TVE in Katsina State based on institution ownership.

Conclusion

Based on the findings of the study that infrastructural challenges to effective TVE curriculum implementation still exist in tertiary institutions in Edo State, it is obvious that development of relevant employability skills by the students is greatly hampered. In the absence or inadequate basic infrastructural facilities like spacious classrooms, lighted and ventilated workshops and laboratories equipped with modern machines and prompt replacement of faulty machines, lecturers will not bother about practical activities which are the only route to skills acquisition among students. Consequently, the researchers concluded that the government is not doing enough for TVE curriculum to be effectively implemented in tertiary institutions in the state.

Recommendations

Based on the findings and conclusion of the study, the researchers recommended that

1. Relevant stakeholders in TVE should persuade the government to increase funding to facilitate provision of relevant infrastructural facilities to ensure effective curriculum implementation.
2. Management of the tertiary institutions should ensure that funds provided by government for TVE programme is judiciously utilized in providing relevant infrastructural facilities for effective implementation of the curriculum.
3. Management of the tertiary institutions should strategize with parents and students to attract donations from philanthropists within and out the state for provision of infrastructural facilities for effective TVE curriculum implementation.
4. Management of the tertiary institutions should partner with non-governmental organizations to assist in providing infrastructural facilities for effective implementation of TVE curriculum.
5. Federal and state governments should increase funding for TVE programme in tertiary institutions in Edo State to facilitate the provision of relevant infrastructural facilities for effective curriculum implementation.

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