Impediments against Adequate Implementation of Technology Education Programmes in Tertiary Institutions in Rivers State

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Abstract: *The study attempted to examine perceived impediments against implementation of technology Education programmes in Tertiary Institutions in Rivers State. It adopted the analytical survey design approach. Its population is all lectures and students of technology education in tertiary institutions in Rivers State. Out of the entire population, thirty (30) respondents comprising ten (10) lecturers and twenty (20) students of technology education was drawn out as sample size through cluster sampling technique, for the study. A well structured 18-item questionnaire was developed personally by the researcher. It was developed on the 4-point Likert summation scale and was validated by two experts in the department of Technology education and one exert in measurement and evaluation in the faculty of education in the University. It was adjudged to have face validity and content validity. It was then pilot-tested on ten respondents in another area different from the study area. There after, the Conbach alpha test of reliability was established which gave $\Upsilon = 0.73$ which was of acceptable limit. Data where collected during the administration of the instrument. Three research questions and three hypotheses were used to guide the study. The research questions were answered using mean scores and standard deviations while the hypothesis were tested with t-Test statistics were used to test the hypotheses at 0.05 level of probability. Results indicated that lack of training and re-training, poor legislations and the Nigerian value system all affect the implementation of technology education negatively in tertiary institutions in Rivers State. It was recommended that Rivers State government should embark on training and retraining of technology education lecturers among others.*

Keywords: *Technology Education, Technology Education Programmes, Implementation of Technology Education Programme*

Introduction

Technology education is a type of education that is designed to prepare students/learners for the world of works. It cultivate crops of students for industry, agriculture, commerce, home economics, technical know-how and above all, it builds her students for entrepreneurial skill acquisition necessary for students' self-reliance. It is a comprehensive term int he educational process which includes in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, altitudes, understanding and knowledge in relation to occupations in different sectors of economic and social life (FGN 2004).

Technology education is sometimes misused as technical and vocational education. Ofcourse, key are words of smilar meanings, but a clear distinction between them, is that, technology education is the advance level of technical and vocational education. It is mainly for the preparation of the would-be technologists in areas like mechanical, civil, building, electrical/electronics etc based on practical and mental knowledge. Unlike engineering, technology education endeavours to involve students in practical know-how of their technology fields. Indeed, technology education is more practically

oriented than engineering which is more or less concerned about supervision and designing of engineering projects.

In Ugwuja (2010), it stated that technology education is framed to promote students' abilities in relation to their career goals with a view to making them good technologist who can withstand the test of time by thinking creatively and intelligently for the overall development of their society. He further stressed that, it is a systematic training experiences which are designed and programmed to fit students in their different professions thereby making them self reliant or job –creators after their University education. Technology education is capable to provide practical experience which leads to acquisition of specific skills in mechanical technology, building technology, woodwork technology, electrical/Electronic technology and metallurgy to mention but a few. It enables designers in technology to update their talents in special areas of technology.

It is factual that the purpose of technology education is the training of the technologists that would be capable to transform the nation's economy and equip the citizens with various modern technologies and make our dear country a-technology exporting country. The interpretation of this, is that, in a bid to devoid our society of youths restiveness technology education is the answer. The reason is quite obvious in the sense that, once the youths of any nation are engaged in meaning ventures that will promote the living conditions, crime rate and other social atrocities will be reduced to the bearest minimum.

Again technology education on the other hand can be seen as that type of education which enables students after their training programmes in the University to acquire the necessary skills in their different areas of specializations that culminates into an industrial experience within a work oriented society amongst other things, it involves the enrichment of the capabilities that influence the effective psychomotor or cognitive domains of the individual in readiness for the world of works, in order to satisfy certain values, work goals and aspirations such that both local and national needs would be met.

However, it would be pertinent to note that technology education as an academic discipline is quite distinct from engineering at the University level. This is because, technology education is more of practical-based which provides room for mastery and dexterity for students. Whereas, engineering as an academic discipline does not provide such broad based practical orientation to students.
Technology education attempts to equip its graduates with skill acquisitions necessary for the training of technically oriented personnel who are to be initiators, facilitators and implementers of technologically development of a nation as suggested by Uwaifor in Okoye and Arimonu, (2016), They further stated that, training programmes which technology education provides to her students provides a panacea for the training of an individual on the need to be technologically literate which would eventually lead him to the pathway of self-reliance and sustainability. If this is the case, it implies that technology education has direct impact on the economy and social life of our nation – Nigeria.

Nevertheless, the contributions of technology education cannot be under-estimated in any nation. This is because of its immense contributions towards reduction of crime waves and promotion of entrepreneurship ventures in different societies today. Indeed, it has helped curb down poverty, hunger and starvation including unemployment in many countries of the world nowadays. But despite all these great contributions of technology education tot he building of effective citizenship

of the individual, it is evidenced that it is being short-changed by numerous impediments as opined by Eze, (2013).

The above gives the reason why Oranu (2004) observed that the good intension of Nigerian successive governments about promoting technology education are maligned, with a lot of challenges which include the following:

  i)   Inadequate funding
  ii)   Inadequate provision of resources for the effective teaching of technology education in universities;
  iii) Lack of indigenous text books
  iv)   Lack of training and retraining of lecturers of technology education
  v)   Lack of priority attention by curriculum developers among others. In view of this, it is of the view that irrespective of the fact that there are many impediments confronting technology education in Nigeria today, it is hoped that, the anomalies will be corrected thereby creating an enabling environment for technology, education to strive much better in a bid to promoting the vast cultural heritage of our country – Nigeria. Hence, such attempt will help our country to build up a big economy for prosperity.

Statement of the Problem

Technology education has a complex role to play for the sustainable development of society. As such, much has to be done in a bid to provide an enabling environment for it strive successfully and progressively. Therefore, there arise the need to address some of the impediments militating aganist the smooth running of technology education as an academic discipline in tertiary institutions in Rivers State. Some of these impediments include amongst others the following;

  i)   Lack of training and retraining of technology education lecturers in tertiary institutions
  ii)   Inadequate funding technology education
  iii) Apathy of Legislators to enable appropriate laws that would promote the study of technology education
  iv)   The value system accorded technology education inNigeria and
  v)   Inadequate provision of resources for technology education.

However, it is hoped that the findings of this study will provide solutions to the above mentioned inadequacies confronting technology education. The findings will also make suggestions that will promote an encouraging environment for technology education in an attempt to meeting up its aims and objectives in Nigeria.

Purpose of the Study

The purpose of this study is to examine perceived impediments militating aganist technology education in Rivers State specifically, the objectives of this study include:

  i)   To investigate the effects of lack of training and retraining of technology education lecturers on technology education based ont he opinions of the technology and studies in tertirary institutions in Rivers State.
  ii)   To investigate the effects of effects of the Nigeria value system on technology education based ont he opinions of technology lecturers and students in tertiary institutions in Rivers State.

iii) To investigate the effects of poor legislation on technology education based on the opinions of technology lecturers and students int ertirary institutions in Rivers State.

Research Questions

The following research questions were used to guide the study:

i) What is the effect of lack of training and re-training of lecturers on technology education based on the mean responses of technology lecturers and students in tertiary institutions in Rivers State?

ii) What is the effect of the Nigerian value system on technology education based on the mean responses of technology education lecturers?

iii) What is the effect of poor legislations on technology education based on the mean responses of technology education lecturers and technology education students in tertiary institutions in Rivers State?

Hypotheses

The following null hypotheses were postulated for the study and were tested at 0.05 level of significance.

i) There is no significant difference between the mean responses of lectueres and students of technology education based ont he effect of lack of training and retraining of technology education lectueres in tertiary institutions in

ii) There is no significant difference between the mean responses of lecturers and students of technology education based on the effect of the Nigerian value system on technology education in tertiary institutions in Rivers State.

iii) There is no significant difference between the mean responses of lecturers and students of technology education based on the effects of poor legislations on technology education in tertiary institutions in Rivers State.

Methodology

The study adopted an analytical survey design approach which uses a questionnaire as an instrument for data collection from respondents. This implies that, it will use parametric approach in its data analysis. The population of the study was made up of all lecturers and students of technology education int he study areas. A total of 150 respondents formed the target population. This number comprised 50 lecturers and 100 students of technology education The study used cluster – sampling technique to select 10 lecturers and 20 students of technology education making a total of 30 respondents as the sample size. This represents 20% of the target population. The instrument used for data collection for the study was personally developed by the researcher; and it was questionnaire titled: perceived impediment against technology Education PIATEQ. IT ADOPTED THE 4-POINT Likert summation scale with the following – strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and strongly Disagree (SD) = 1. This was for positively worded statements while the reverse was the case for negatively worded statement. The Instrument was given to the researcher's supervisor and two experts in the department of Technology Education, Faculty of Education of the University. Their corrections were made to reflect before the final draft of the instrument. It was adjudged valid to elicit the necessary information based on objective of the study. In a bid to determine the reliability of the instrument the Cronbach Alpha method was used to established the reliability index of the instrument. This was done based on the results of the obtained during the pilot testing of the instrument. It was pilot tested on ten (10) respondents of similar characteristics but in another area different from the study area. Completed copies were returned and their responses were analyzed using cronbach alpha method. This gave a reliability index r = 0.73 which was high enough for acceptability. The instrument for the study, was administered personally by the research. The

completed copies were retrieved from the respondents two days later to give them enough time to respond to the items on the questionnaire. Retrieval was 100% from the respondents. Responses of respondents from the instrument – PIATEQ were collected based on the 4- point likert scale. The mean responses of technology education lecturers and that of technology education students were used to answer the research questions while the t-Test statistics was used to test the hypotheses at 0.05 level of significance. The criterion mean of 2.50 was used to compare with the mean scores of the respondents in order to answer the research questions. For example if the mean was 2.50 and above, it was agreed but if less than 2.50, it was disagreed. On the other hand, if the t- calculated value was less than the t – critical value, the hypothesis in question was not rejected but if the t-calculated value was greater than the t – critical value, the hypothesis in question was rejected.

Research Question 1: What is the effect of lack of training and re-training of lecturers on technology education based on the responses of lectures and students of technology in education in Tertiary institution in Rivers State?

Table 1: Tffect of lack of training and re-training of lecturers on technology education

S/N	Items	Lecturers		Decision	Students		Decision
1	Technology education lecturers are provided on the job training periodically	2.40	1.40	Disagreed	2.10	0.54	Disagreed
2	Technology education lecturers are well updated in knowledge and so do not need training	2.49	1.00	Disagreed	2.52	0.52	Disagreed
3	Appropriate on the Job trainings are not provided to technology education lecturers	3.40	1.29	Agreed	3.11	1.10	Agreed
4	In – Service training is enough for technology education lecturers to update their knowledge	2.47	0.93	Disagreed	2.56	0.91	Agreed
5	Training and re-training of technology education lecturers will enhance the teaching of technology education	3.47	0.93	Agreed	3.44	1.0	Agreed
6	Training and re-training of Technology Education lectuerers will inform them of new scientific and technological innovation	3.45	1.20	Agreed	3.34	0.68	Agreed
	Grand total	2.95	1.07	Agreed	2.84	0.079	Agreed
	Criterion mean.	2.50					

Field survey 2021

From the table 1, it is indicated that the mean response of technology education lectueres is 2.95 with a standard deviation of 1.07. While that of the technology education students is 2.84 with a standard deviation of 0.79. These mean values are greater than the criterion mean of 2.50. It thus implies that they all agreed that lack of training and retraining of technology education lecturers is an impediment against the smooth running of technology education in tertiary institutions in Rivers State. This is supported from their mean responses on each item on the table. Both sets of respondents agreed and disagreed on the same items except in item 4 where the lecturers disagreed and the students agreed.

Research Question 2: What is the effect of the Nigerian value system on Technology education based on the mean responses of lecturers and students of technology education in tertiary institutions in Rivers State?

Table 2: Summary ratings of respondents on the effect of poor legislations on technology education.

S/N	Items	Lecturers		Decision	Students Mean		Decision
7	The legislations for technology education in Nigeria are adequately provided	3.20	0.95	Agreed	3.60	0.67	Agreed
8	The legislations for technology education if implemented will promote the teaching/learning of technology education in Nigeria	3.50	1.24	Agreed	3.58	0.91	Agreed
9	The Nigerian laws provide adequate allocation for technology during budgeting	2.20	0.90	Disagreed	2.00	1.09	Agreed
10	The Nigerian laws do not give any priority attention to technology education programmes	3.55	0.95		3.33	1.08	
11	Lack of implantation of legislations made for technology education has made technology to suffer set –back as an academic disciplines	3.47	0.72	Agreed	3.01	0.88	Agreed
12	Because technology can be bought from overseas into the country, Law makers in Nigeria do not see techno-education significantly	3.43	0.98	Agreed	3.12	0.45	Agreed
	Grand total	3.23	0.96	Agreed	3.11	0.84	Agreed

Field survey 2021

From table 2, it was indicated that all the respondents agreed with all the items, except in item 10 where they all disagreed aganist the fact that Nigerian laws provide adequate allocation for technology education programmes. Besides that, the grand mean of technology lecturers is 8.23 with a standard deviation of 0.96 while that of technology students is 3.11 with a standard deviation of 0.84. These mean values are greater than the criterion mean of 2.50. Hence, it implies that, all the respondents agreed that laws enacted for technology education may be adequate, but lack of implementation of these laws fraustrates every effort to improve technology education. What is the effect of poor legislations on technology education based on the mean responses of lecturers and students of technology education in tertiary institutions in Rivers State?

Research Question 3: What is the effect of poor legislations on technology education based on the mean responses of technology education lecturers and technology education students in tertiary institutions in Rivers State.

Table 3: Summary ratings of respondents on the effect of the Nigerian value system on technology education.

S/N	Items	Lecturers		Decision	Students		Decision
14	Many Nigerians do not value technology education as a solution to their technological needs	3.40	0.86	Agreed	3.31	0.89	Agreed
15	Many Nigerians value foreign made goods more than locally made ones	3.52	0.73	Agreed	3.25	0.99	Agreed
16	Many Nigerians do not give priority attention to a practical-base discipline like technology education	2.51	1.17	Agreed	2.60	0.94	Agreed
17	Parents prefers their ward to study engineering instead of technology education	3.37	1.19	Agreed	2.89	1.08	Agreed
18	Many Nigerians think that technology Education as a discipline in the Unversity is meant for educationally disadvantaged students	3.03	0.74	Agreed	3.27	0.99	Agreed
	Grand Total	**3.15**	**0.95**	**Agreed**	**3.12**	**0.95**	**Agreed**

Field Data

From table 3, it was indicated that, all the respondents agreed with all the items. For example, they all agreed that many Nigerian show apathy to locally manufactured products, but rather prefer foreign made goods with a mean response of 3.08 and standard deviation of 1.00 for lectuerers and 3.25 and 0.98 as mean response and standard deviation respectively for students as shown in item 15.

Apart from that their grand mean responses are 3.15 and grand total for standard deviation are 0.95 and 0.95 respectively. These mean values are greater than criterion mean of 2.50 which sets the standard for agreed responses or disagreed responses. Hence, it is agreed that all the respondents accepted the fact that the Nigerian value system has a negative effect on the development of technology education in tertiary institution in Rivers State.

Hypothesis 1: There is no significant difference between the mean responses of Lectureres and students of technology education on the effect of lack of training and retraining of technology education lecturers in Tertiary institutions in Rivers State.

Table 4: t-test for effect of lack of training and retraining of technology education lecturers

Source	N	X	Sd	df	SE	t- cal	t-crit.	Sig. Level,	Decision
Lecturers	10	2.95	1.07						
				28	0.38	0.29	2.05	0.05	Not rejected
Students	20	2.84	0.79						

Field Data

Result in table 4 indicated that the t-calculated value is 0.29 while the t-critical values 2.05 at 0.05 probability level and at 28 degree of freedom. So, since, the t-calculated value of 0.29 is less than the t-critical value of 2.05, the null hypothesis i was therefore, upheld.

Hypothesis 2: There is no significant difference between the mean responses of lectuerers and students of technology education on the effect of the Nigerian Value system on technology education in tertiary institutions in Rivers State.

Table 5: t-Test for effect of the Nigerian value system on Technology education in tertiary institutions in Rivers.

Source	N	X	Sd	df	SE	t- cal	t-crit.	Sig.Level,	Decision
Lecturers	10	3.15	1.95						
				28	0.38	0.08	2.05	0.05	Not rejected
Students	20	3.12	0.95						

Field Data

Result in table 5 indicated that the t-calculated value is 0.08 while the t-critical value is 2.05 at 0.05 probability level and at 28 degree of freedom. Based on this, the null hypothesis 2 was not rejected.

Hypothesis 3: There is no significant difference between the mean responses of lecturers and students of technology education based on the effects of poor legislations on technology education in tertiary institutions in Rivers State.

Table 6: t-Test for effect of poor legislations on technology education.

Source	N	X	Sd	df	SE	t- cal	t-crit.	Sig.Level,	Decision
Lecturers	10	3.23	1.96						
				28	0.36	0.34	2.05	0.05	Not rejected
Students	20	3.11	0.84						

Field Data

Result in table 6 indicated that the t-calculated value is 0.34 while the t-critical value is 2.05 at 0.05 probability level and at 28 degree of freedom. Hence, since the t-calculated value of 0.34 is less than the t-critical value of 2.05, The null hypothesis 3 was not rejected.

Discussion of findings

Table 1 was used to answer research question 1. It was indicated here that the mean response of lectueres of technology education was 2.95 with a standard deviation of 1.07 while that of the students of technology education was 2.84 with a standard deviation of 0.79. the criterion mean used was 2.50. so, since their mean responses were greater than the criterion mean of 2.50, it was accepted that all the respondents agreed with the fact that lack of training and retraining of technology education lecturers adversely affects the smooth running of technology education in tertiary institutions in Rivers State.

This was supported by the result in table 4 which was used to test hypothesis 1; and which indicated that the t-calculated value was 0.29 while the t-critical values was 2.05 at 0.05 probability level. On this basis the hypothesis 1 was upheld. This means that both sets of respondents did not have any significant difference in their opinion about the fact that lack of training and re-training of technology lecturers influences the smooth running of technology education as an academic discipline in tertiary institutions in Rivers State. This is in line with the observation of Udofia & Etai (2012) which states that pre-service training of teachers of technology is not enough to prepare them for the enormous task they have for their students. It is also supported by the assertion of Okobia (2013) which states that only through the growth of training and re-training that the gap between advancing knowledge and practice can be bridged.

Table 2: was used to answer the research question 2. It indicated that the the mean response of lecturers was 3.15 with a standard deviation of 0.95, while that of the students was 3.12 with a standard deviation of 0.95. the criterion mean was 2.50, hence, since these mean responses of lectures and students are greater than the criterion mean, it was accepted that both lecturers and students of technology education accepted that the Nigerian value system affects the growth of technology education negatively in tertiary institutions in Rivers State.

This was supported by the result in Table 5 which was used to test hypothesis 2. The result in this table 4.5 indicated that the t-test calculated value of 0.38 was less than the t-critical value of 2.05 at 0.05 level of probability and at 28 degree of freedom. On this basis the null hypothesis 2 was upheld. This means that all the respondents agreed and accepted that the Ngierian value system affects the growth of technology education in tertiary institutions in Rives State negatively. This is in accordance with Okoye and Arimonu 2016 which observed that int he Nigeria the societal perception towards technology education is very disheartening because, the society sees this laudable programme as being meant for physically challenged and indigent people of the society.

Table 3 was used to answer research question 2. It indicated that the mean response for lectures was 3.23 with a standard deviation of 0.96, whereas, that of the students was 3.11 with a standard deviation of 0.84. The criterion mean was 2.50 and these mean values are greater than the criterion mean on this note, it was agreed that both sets of respondents accepted that poor legislations in Nigeria negatively affects the smooth running of technology education in tertiary institutions in Rivers State.

It was supported in table 6 which result indicated that the t-calculated value was 0.34 while the t-critical value was 2.05 at 0.05 level of probability and at 28 degree of freedom. Based on this it was accepted that the null hypothesis was not rejected. The implication of this, is that the Nigerian laws do not help promote technology education in tertiary institutions in Rivers State. Apart from the poor legislations, the laws made to help enhance the technology education programmes are not

implemented. The Nigerian law makers make mere lip services to enact laws that are capable to promote the smooth running of technology education in the country as stressed by Ikenga Oru Afolabi (2009).

Conclusion

The results of the study indicated that lack of training and re-training of technology education lecturers has adverse effects on technology education programmes in tertiary institution. It was indicated that poor legislations and the Nigerian value system have influenced the smooth running of technology education as an academic discipline in tertiary institutions. All enumerated thus constitute to impediments militating against the implementations of technology education in Rivers State in particular and in Nigeria in general.

Recommendation

The following recommendations were made;

i.   Government of Rivers State should provide technology education lecturers with the opportunity for their training and re-training in order to update their knowledge on new innovation in technology.

ii.   As a matter of urgency, Nigerian law –maker should endeavour to ensure that they enact laws that will encourage smooth running of technology education in tertiary institutions.

iii.   Rivers state government should make it mandatory to sensitize the masses about the importance attached to technology education as a bid to washout the Nigerian value system.

iv.   Rivers State government should without delay provide technology education textbooks to all tertiary institutions that offer it in the state.

v.   Rivers State government should give special allowances to technology education students as a way to incentiveise them.

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