Strategies for Enhancing Technical Education Programmes in Higher Institutions for Economic Transformation in Rivers State

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Abstract- ***The study focused on the strategies for enhancing Technical education programmes in higher institutions for economic transformation in Rivers State. It investigated strategies for enhancing practical and classroom activities in technical education in higher institutions for economic transformation in Rivers State. Two research questions and hypotheses were answered and tested at .05 level of significance. A descriptive survey design guided the study. The population of the study comprised 113 technical education lecturers and 107 year three students in the three higher institutions in Rivers State that offers the programme. From the population 75 lecturers and 90 students were purposefully sampled, therefore, 165 respondents were used for the study. Self-made survey questionnaire served as the instrument for the study. The instrument was validated by two experts. Reliability of the instrument was established using Cronbach Alpha reliability coefficient which yielded a coefficient of 74. Mean and Standard Deviation were used to answer the research questions while z-test statistical tool was used to test the hypotheses. The study found among others that adequate supervision, retraining of trainers in their core field, appointing core skilled technical trainer as HOD are some strategies that can improve the progrgramme for economic transformation in the State. It was recommended among others that the curriculum should be reviewed to include practical examination as part of assessment for every semester, as the school management and government should ensure that practical resources are always available for every student for these programme to thrive.***

Indexed Terms- ***Enhancing, Technical education, & Economic Transformation***

I. INTRODUCTION

Education is a veritable tool that is used in the development of countries social, political, technological, and economic endeavors. It is the process whereby the organized knowledge of the past generation is made available for the current or newer generation. The Nigerian system of education is one of the system in the country that has made impact on human development irrespective of the controversies surrounding the system. (Oluwalola, 2019). The system is designed to develop manpower in different area of specialization that will help in all round development of the country.

Several educational programmes have been introduced to provide manpower in different fields for economic improvement of the country, one of the programmes that are designed for the achievement of the numerous educational goals is technical education.

Technical education is a branch of education that is concerned with the development of competent worker in terms of acquisition of knowledge and technical skills. In other words, technical education could be described as a programme designed in tertiary institutions to train individuals that will serve as technologists in automobile technology, building technology, electrical/electronic technology, metalwork technology, or and woodwork technology related industries or be able to create employment by being self-reliant. Nwigbo (2019) sees technical education "as a planned programme of courses and learning that begins with exploration of career positions, supports basic academic and life skills, and enables achievement of high academic standards leadership, preparation for industry defined work, as well as, advanced and continuing education; it

prepares learners for careers that are based in manual or practical activities, and totally related to a specific occupation of vocation. In other words, "it is an education designed to develop occupational skills". Samuel and Kissi in Ogwa and Ndem (2017) observed that the people with requisite scientific and technical skills that can create wealth and help a country to attain economic prosperity should be trained through technical education. Ozoemena (2019) stated that technical education has diversified over the 20th century and now exists in industries such as retail tourism, information technology, and cottage interties. Technical education has been an integral part of national economic development strategies in many countries because of its impact on productivity and economic transformation, Economic transformation is viewed as a process of moving labour and other resources from lower-to-higher productive activities (Yusuf and Soyemi, 2018). At the level of national economy, it involves diversification, the creation of new subsectors of activity and increased domestic value addition in trade. At the level of firms and households, it implies the acquisition of new productive capabilities and the ability to compete in larger and more distant markets on a growing scale. In other words, economic transformation can be attributed to the process in which a poor, rural-based country becomes a middle-income country with a rising share of industry and services in gross domestic product (GDP) and employment.

Skills and knowledge are the engines of economic transformation and social development of any nation (Goel, cited in Ayonmike, Okwelle and Okeke, 2015), and technical education holds the key to training the skilled and entrepreneurial workforce needed for the changing technological workforce. Practical skills are the analysis of complex figures or the specific tools. A skilled person is an individual that has undergone an extensive training in his job and there by mastered the activities that lead to successful performance in the concerned profession, trade or job. has learned ability to do something well, correctly or right, skill involves mastering due to training, exposure or practice; though there could be some personality traits enhancing the rapidity of the acquisition and perfection of technical skills in technical education (James in Nwauzi, Ovundah and Amah, 2021). However, impacting the necessary skills that is needed for gainful employment and self-reliant which in turn lead to economic transformation is important. Practical Skill acquisition remains the major goal of technical education and this helps to satisfy the personal work needs of both the individual and the society. In technical education particular, teachers must maintain their credibility in their own trade or profession. Maintaining credibility requires a shift from a teacher focus to learner (student) needs focus. Part of what reduces the qualities of the programs is the inability of technology teachers to integrate theory and practice to form a unit whole (Okoye & Okwelle, 2014).

Strategies to enhance practical activities in technical education programmes calls for the review of technical education curriculum in consultation with industry to ensure a demand driven approach and increase the relevance of programmes to the needs of industry, ensure that practical skills are assessed as part of all technical education examinations, initiate and articulate appropriate technology programmes that will enhance the capacity of vocational centres to support and service cottage industries, broaden and localize the technical education curriculum to make formal skills more relevant to immediate communities, mandate technical programmes to develop products and provide services to their immediate communities on a commercial basis, establish small scale enterprises to be managed by staff and students in technical programmes, solicit private sector sponsorship to supplement government subventions to technical programmes, encourage government patronage of goods and services offered by technical education (Ishaya & Halliru. 2016). Emmanuel and Yunus (2016) stressed the need to have industries to supply needed machines, equipment, tools and raw materials the necessity to have synergy between institutions and industry to draw up appropriate curriculum and collaborate as may be needed and the importance of effective teachers in technical education In line with this, Ochogba and Ordu (2019) postulated that the use of real life materials, regular practical assignment to students, regular evaluation of students, grouping students during instruction, relating lessons to real life situations and students personal experience, taking students on field trip, adoption of multimedia for teaching, individualized teaching, effective planning of school activities and regular probing of students to ascertain the achievement of school goals

are the techniques that can enhance student's participation in automobile mechanical works in technical colleges. Therefore, if the above strategies are relevant in enhancing students' participation in automobile technology education which is practical oriented, part and parcel of technical education, then it could be also a strategy that can enhancing technical education programmes in higher institutions in Rivers State

II. STATEMENT OF THE PROBLEM

Technical Education graduates from tertiary institutions are expected to take up jobs in the services or production industries, find themselves in offices of information technology, resort to self-reliant jobs in their specialization areas to transform Nigeria economy because they have passed through formal institutions and have acquired better coordinated knowledge and skills needed on the job, knowing that technical education has been an integral part of national economic development strategies in many countries because of its impact on productivity and economic transformation, Ozoemena (2019). Despite its contributions, the leaders of Nigeria and the school management have not given this aspect of education the attention it deserves, this is one of the reasons for the Nations underdevelopment and the economic hardship the country face in these days. The neglect of technical education is socially and economically injurious because it is robbing the nation the contribution the graduates would make on national development and economic transformation. Consequently, the society lacks skilled technicians: bricklayers, carpenters, painters, auto-mechanics, laboratory and pharmacy technicians, electrically electronic technicians, and skilled vocational nurses, etc. (Odor, Okafor, Odo, Ejikeugwu, & Ugwuoke, 2017) In a similar perspective, Udofia, Ekpo, Nsa, & Akpan (2017) also reported that wrong approach to teaching and evaluation of practical activities in technical education programmes rather than impart skills to students, produce students who are ill-equipped with practical skills, inadequate creative power and unable to secure employment. It is on these vain that the research sort to look into strategies for enhancing technical education programmes in higher institutions for economic transformation in Rivers State.

III. PURPOSE OF THE STUDY

The study focused on the strategies for enhancing Technical education programmes in higher institutions for economic transformation in Rivers State, Specifically, the study aimed at:

1. Investigating strategies for enhancing practical activities in technical education programmes in higher institutions for economic transformation in Rivers State
2. Ascertaining strategies for enhancing classroom activities in technical education programmes in higher institutions for economic transformation in Rivers State

Research Questions

The following research questions were designed to guide the study.

1. What are the strategies for enhancing practical activities in technical education in higher institutions for economic transformation in Rivers State?
2. What are the strategies for enhancing classroom activities in technical education programmes in higher institutions for economic transformation in Rivers State?

Hypothesis

The following hypotheses guided the study and was tested at 0.05 level of significance.

Ho_1. There is no significant difference between the mean responses of technical education lecturers and students on the strategies for enhancing practical activities in technical education programmes in higher institutions for economic transformation in Rivers State

Ho_2. There is no significant difference between the mean responses of technical education lecturers and students on the strategies for enhancing classroom activities in technical education programmes in higher institutions for economic transformation in Rivers State.

IV. METHODOLOGY

Descriptive survey design was used for this study. The population of the study comprised all the technical education lecturers and year three students in the

higher institutions that offer technical education in Rivers State, they are, Rivers State University Port Harcourt, Ignatius Ajuru University of Education Port Harcourt, and Federal College of Education (Technical) Omoku. As at the time of this study, there were a total population of 113 technical lecturers with 107 year three students in the three institutions. Out of this, a total of 75 lecturers and 90 students were sampled and used for the study. The instrument for data collection was a self-made survey questionnaire titled "strategies for enhancing Technical education programmes in higher institutions for economic transformation in Rivers State (SETEPHIETRS). The instrument was structured in the pattern of 4-point rating scale. The instrument was validated by two experts in the department of industrial technical education in Ignatius Ajuru University of education Port-Harcourt. The reliability of the instrument was established using test re-test method with Pearson Product Moment Correlation. The instrument was administered to selected technical education lecturers twice in Niger Delta University, with an interval of two weeks. The data obtained from the two times of administering the instruments were used in computing the reliability of this study. The coefficient achieved was .82, normally, in Okwelle & Ayonmike (2014), recommended acceptable value of 0.7 for good reliability coefficient. Since the reliability coefficient obtained is above the value, the instrument was considered suitable for the study. Copies of the instruments were administered directly to the respondents by the researcher; all instruments administered were completely filled and returned by the respondents. Mean was used to answer the research questions, while Standard Deviation was used to ascertain the homogeneity of responses. Furthermore, t-test was used to test the hypotheses at .05 level of significance. Mean scores less than 2.50 were rejected while mean scores equal or greater than 2.50 were accepted. Also, calculated hypotheses value less than table value were accepted while calculated hypotheses greater than table values were rejected.

V. RESULTS

Research Question 1: What are the strategies for enhancing practical activities in technical education in higher institutions for economic transformation in Rivers State.?

Table 1: Mean Responses on the strategies for enhancing practical activities

		Lecturers (n_1=75)			Students (n_2=90)		
S/N	items	$\bar{x}_1$	SD_1	Decision	$\bar{x}_2$	SD_2	Decision
1	Strengthening IT attachment	3.41	.69	Agree	3.04	.99	Agree
2	Posting students for IT attachment to their areas of specialization	3.65	.51	Agree	3.22	.96	Agree
3	Appointing high skilled lecturers as IT supervisors	3.50	.53	Agree	3.25	.73	Agree
4	Employment adequacy and training of more by SIWES to monitor IT activities	3.06	1.05	Agree	3.00	.85	Agree
5	Periodic review of technical education curriculum	3.15	.79	Agree	3.02	.83	Agree

6	Forging closer link between technical education and the industries	3.05	.64	Agree	2.93	1.00	Agree
7	Appointing technical skill oriented staff as HODs	2.78	1.05	Agree	2.84	.95	Agree
8	Provision of functional and up-to-date machine/equipment	3.26	.88	Agree	3.09	.94	Agree
9	Given regular on-the-job training to the trainers	2.98	.89	Agree	3.09	.94	Agree
10	Regular provision of training materials,	3.33	1.01	Agree	2.97	.89	Agree
11	Have industries supply needed machines, equipment, tools etc	3.66	.47	Agree	2.89	.93	Agree
12	Ensure that practical skills are assessed as part of examination	2.90	91	Agree	3.01	.97	Agree
13	Broaden and localize technical education curriculum to make formal skills relevant	3.45	.63	Agree	2.92	1.02	Agree
	Total	3.24	.77	Agree	2.97	.92	Agree

Source: Field Survey, 2024

Table 1: on the strategies for enhancing practical activities in technical education programmes in higher institutions for economic transformation in Rivers State shows that lecturers and students agreed that all the items posted above, are most of the strategies that can enhance practical activities in technical education programmes in higher institutions in Rivers state. This is based on the grand mean score of 3.24 and 2.97 respectively which is above 2.50 that was earlier stated as the acceptable means. Furthermore, the closeness in the standard deviation for the two groups which is .77 and .92 shows homogeneity in their responses.

Research Question 2: What are the strategies for enhancing classroom activities in higher institutions for economic transformation in Rivers State?

Table 2: Mean Responses on the strategies for enhancing classroom activities

		Lecturers (n_1=75)			Students (n_2=90)		
S/N	Systems	$\bar{x}_1$	SD_1	Decision	$\bar{x}_2$	SD_2	Decision

1	Assigning new staff to work with an old/experienced staff	2.98	.97	Agree	3.05	.85	Agree
2	Enhancing staff skills in ICT	3.21	.57	Agree	3.84	.86	Agree
3	Regular supervision of classroom activities	3.08	.94	Agree	3.91	.99	Agree
4	Welfare and training of lecturers as catalyst in producing students with high practical skills	3.24	.82	Agree	3.09	.75	Agree
5	Training lecturers on planning and organizing technical instructions	3.55	.84	Agree	3.26	.88	Agree
6	Periodically send lecturers to workshops for expert knowledge on their area of specializations	2.97	.91	Agree	3.61	.79	Agree
7	Adoption of multimedia strategies as part of teaching strategies	2.86	.66	Agree	3.05	1.05	Agree
8	Individualized teaching	3.33	1.01	Agree	3.00	.97	Agree
9	Relating lesson to real work life situation	3.66	.67	Agree	3.06	.98	Agree
10	Grouping students for fact finding and problem solving	3.15	.84	Agree	2.90	.78	Agree
11	review of technical education curriculum in consultation with industry to ensure a demand driven approach	3.49	.81	Agree	3.41	.69	Agree
12	Broaden and localize technical education curriculum to make formal skills relevant	3.65	.51	Agree	3.04	.83	Agree
	Total	3.26	.79	Agree	3.26	.86	Agree

Source: field Survey, 2024

Table 2: on the strategies for enhancing classroom activities in technical education programmes in higher institutions for economic transformation in Rivers State shows that lecturers and students agreed that all the items contained in the table above, are the strategies that can enhance classroom activities in technical education programmes in higher institutions in Rivers state. This is based on the grand mean score of 3.26 and 3.26 respectively which is above 2.50 that was earlier stated as the acceptable means. Furthermore, the closeness in the standard deviation for the two groups which is .79 and .86 shows homogeneity in their responses

Table 3: z-table analysis on the strategies for enhancing practical activities in technical education programmes

Category	N	X	SD	DF	z-cal.	z-crit	Remark
Lecturers	75	3.26	.79				
				163	.00	1.96	Not significant
Students	90	3.26	.86				

Source: researchers field survey, 2024.

Data in table 3 above reveal that z-calculated (.00) is not greater than z-critical (1.96) at 0.05 level of significance. Therefore, the null hypothesis was accepted, hence there is no significant difference between the mean responses of lecturers and students on the strategies for enhancing practical activities in technical education programmes in higher institutions in Rivers state.

Table 4: z-table analysis on the strategies for enhancing classroom activities in technical education programmes

Category	N	X	SD	DF	z-cal.	z-crit	Remark
Lecturers	60	3.24	.77				
				163	1.86	1.96	Not significant
Students	75	2.97	.92				

Source: researchers field survey, 2024

Data in table 4 above reveal that z-calculated (1.86) is not greater than z-critical (1.96) at 0.05 level of significance. Therefore, the null hypothesis was accepted, hence there is no significant difference between the mean responses of lecturers and students on the strategies for enhancing classroom activities in technical education programmes in higher institutions in Rivers Sate.

CONCLUSION

From the findings of the study in table one, it revealed that strengthening IT attachment, appointing high skilled lecturers as IT supervisors, employment adequacy, periodic review of technical education programme curriculum, forging closer link between technical education and industries, appointing technical skill oriented staff as HODs, provision of functional and up-to-date machines and equipment, solicit private sector sponsorship to supplement government subventions to technical programmes, encourage government patronage of goods and services offered by technical education, this in line with assertion of Ishaya & Halliru. (2016). More so, the findings in table two revealed that assigning new staff to work with an old/experienced staff, enhancing staff ICT skills, regular supervision of classroom activities, training lecturers on planning and organizing technical instructions, adopting a multimedia strategies as part of teaching strategies, individualized among others are the strategies of enhancing classroom activities in technical education programmes, this finding is in line with the view of Ochogba and Ordu (2019) who postulated that, regular evaluation of students, grouping students during instruction, relating lessons to real life situations and students personal experience, taking students on field trip, adoption of multimedia for teaching, individualized teaching, effective planning of classroom/school activities and regular probing of students to ascertain the achievement of school goals are the techniques that can enhance student's participation in automobile mechanical works in technical colleges.

RECOMMENDATION

Based on the findings, the following recommendations are made;

1. Government through TETFUND should periodically send technical education lecturers to the industries to update or acquire up-to-date practically skills as it will help to equip the students for gainful employment for economic transformation of the country

2. The curriculum should be reviewed to include practical examination as part of assessment for every semester, as the school management and government should ensure that practical resources are always available for every student for this programme to thrive for economic transformation.

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