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## Vocational and Technology Education: A Tool to Industrialization in Bayelsa State, Nigeria

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**Abstract-** The study examined Vocational and Technology Education, a tool to industrialization in Bayelsa state, Nigeria. The design for the study was comparative survey research design. The population of the study was 98 university graduates of vocational and technology education working in Yenagoa Metropolis, Bayelsa State. The population consists 50 males and 48 females respectively. The instrument for data collection was a questionnaire. The instrument was titled "Vocational and Technology Education Industrialization Questionnaire" (VTEIQ). The instrument have three (3) research questions with twelve (12) statement items. instrument was validated by three experts on face, content and construct respectively. The reliability coefficient was carried out using test-retest method which yielded 0.83. Mean with standard deviation were used to answer the research questions. The hypotheses was tested using Z-test analysis at 0.05 level of significance. From the findings, it was revealed that male and female ratings of university graduates of vocational and technology education with respect to job creation, poverty alleviation and self reliance for industrialization in Bayelsa State, Nigeria have a high extent as a tool for industrialization and it also revealed that there is no significant difference between male and female university graduates of vocational and technology education with respect to job creation, poverty alleviation and self reliance.

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# Vocational and Technology Education: A Tool to Industrialization in Bayelsa State, Nigeria

Ehimen, Theophilus Ehijele <sup>α</sup> & Opia, Bubaraye <sup>ο</sup>

**Abstract** The study examined Vocational and Technology Education, a tool to industrialization in Bayelsa state, Nigeria. The design for the study was comparative survey research design. The population of the study was 98 university graduates of vocational and technology education working in Yenagoa Metropolis, Bayelsa State. The population consists 50 males and 48 females respectively. The instrument for data collection was a questionnaire. The instrument was titled "Vocational and Technology Education Industrialization Questionnaire" (VTEIQ). The instrument have three (3) research questions with twelve (12) statement items. instrument was validated by three experts on face, content and construct respectively. The reliability coefficient was carried out using test-retest method which yielded 0.83. Mean with standard deviation were used to answer the research questions. The hypotheses was tested using Z-test analysis at 0.05 level of significance. From the findings, it was revealed that male and female ratings of university graduates of vocational and technology education with respect to job creation, poverty alleviation and self reliance for industrialization in Bayelsa State, Nigeria have a high extent as a tool for industrialization and it also revealed that there is no significant difference between male and female university graduates of vocational and technology education with respect to job creation, poverty alleviation and self reliance. However, it was recommended among others that Bayelsa State government should invest in vocational and technology education in order to equip youths with the necessary skills for industrialization.

**Keywords:** vocational education, technology education, tool and industrialization.

## I. INTRODUCTION

The development of a state depends on the attention given to the kind of education its citizens acquire. The state grows when education becomes a top priority among other needs, change becomes inevitable. Education is the renewing of the mind of an individual to effect change in the environment. The process of preparing an individual for work oriented change in the environment is known as Vocational Education. Elizabeth (2007), opines Vocational Education as skills and education that prepares a person for a job. It is an education aimed at preparing students for their present /future employment, which may take place in colleges of further education,

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universities or workplace itself and is increasingly being offers to secondary school pupils in the form of work experience (Mairi and George, 1999). However, Bot (2021) sees vocational education as that education that prepares people to work as a technician or to take up employment in a skilled craft or trade as a tradesperson or artisan. It further stated that it is that education training that provides the necessary knowledge and skills for employment. When a student graduates from vocational schools, the graduate is fully equipped with the necessary skills to face the world of work to earn a living and become a useful being to the society. Vocational education prepares individual for usefulness and not liabilities. Vocational education is a fundamental element in the development equation because it allows individuals and societies to unlock their potentials, expand horizons and adopt to the changes in the dynamic world (Nsiah-gyabaah as cited in Elogbo, Eno, and Emogor, 2013). However, Akerele as cited in Elogbo, Eno and Emogor 2013) indentified vocational education as that aspect of education that exposes the learner to acquisition of demonstrable skills that could be transformed into economic benefit. Furthermore, Elogbo, et al (2013) opines Vocational Education as to acquire the particular skills, know-how and understanding necessary for employment in a particular occupation, trade or group of occupations. Vocational education helps develop the individual to understand personal skills in creating solutions to problems in the society.

Hence, the individual derives pleasure from the skills acquired to create a conducive working environment, in so doing the society benefits and peace and harmony is enjoyable at all level of life. Therefore, vocational education is that aspect of the general school curriculum concerned with the acquisition of knowledge, attitudes and skills necessary for securing and advancing in a given occupation (Oranu, as cited in Asotibe and Dan-Maigona (2016, p.75).

However, research has revealed that vocational education and technology education are intertwined to prepare an individual for usefulness in the society. Therefore technology education is the study and knowledge of the practical especially industrial, use of scientific discoveries (Elizabeth, 2007). However, it is the practical use of scientific knowledge in industry and everyday life (Mairi and George, 2007). Technology education is often encapsulated as learning by doing,

(Foster, 2019). Furthermore, it is field of study that covers the human ability to shape and change the physical world to meet needs, by manipulating materials and tools with techniques. It is the application of knowledge to the activity of making (Irishtime, 2021). The step-by step process of constructing a particular thing that shall be beneficiary to the society is called technology education.

Therefore, Vocational and Technology Education is a tool to industrialization. Industrialization is the sense of introducing development to a given state, to equip the citizens with the needed skills for self relevance and economic development. The acquisition of technological skills is very imperative to increase industrialization processes. The effect of vocational and technology education on the economy of a state cannot be over emphasized. A state that values the economical growth and development of its citizens should be kin to vocational and technology education.

Hence, this study, vocational and technology education: a tool to industrialization in Bayelsa State, Nigeria tends to reveal imperative role to industrialization through:

*Job creation:* Job creation is the act of making more jobs available especially for unemployed youths (Asogwa, Isiwu and Ugo, 2016). Vocational and technology Education equip individuals with required vocational and technological skills needed to create job for unemployed to be gainfully employed to give joy and improve livelihood of youths in the society. When an individual is employed, the psychological and physical needs are met directly or indirectly whereby giving the individual a stable health condition. The acquisition of vocational and technological skills is a strong source of wealth creation that helps to alleviate poverty (Obunadike, 2013). Therefore, the need for training and retraining of skill personnel on resource management shall lead to job creation in the society (Uko, 2013).

*Poverty Alleviation:* Poverty is a condition in which a person is unable to maintain a living standard adequate for physical and mental efficiency (Khathiravan as cited in Iloma, Osaji and Atose, 2020). Poverty contributes immensely to break down of laws and order, criminality, contamination of societal values and death (Iloma, Osaji and Atose, 2020). However, poverty alleviation is a set of measures, both economic and humanitarian that is intended to permanently lift people out of poverty (Cluebot, 2021). The provision of vocational and technology education is a solution to existing poverty in the urban and rural areas of a state (Akerlele, Abinbola, Odekunle and Opatola as cited in Awodoyin, Aishatu and Ednna, 2016). However, vocational and technology is a tool that can help in alleviating poverty and so there is the need to equip the poor with such vocational and technological skills which shall at the end help to reduce poverty to its minimum. The adequate engagement of

human and material resources shall definitely foster alleviation of poverty in a state. Therefore, Eze as cited by Ogwa (2016) that Vocational and Technology Education prepares individuals for job. Skills and competencies is the major tool that can empower the youths and free them of the shackles of poverty and as well as potent instrument for reducing incidences of social vices being engaged by youths in the society (p.169). This is in accordance with united nation's sustainable development goals number 1 which states no poverty- the end of extreme poverty "living on less than \$ 1.90 per day". Poverty reduction could emanate directly from the effect of skills acquisition in vocational and technology education as youths with acquired saleable skills would apply such in production venture that would undoubtedly increase their earning capacity (Ogwa, 2016, p.169)

*Self Reliance:* When an individual is equipped with the necessary vocational and technological skills, there is trust in one's self concerning work experience when handling life related problems. The conditions of creating and making a thing at ease bring about inner self satisfaction when working. Vocational and technology education enhance an individuals' ability to depend on himself to get things done and to meet one's own needs. In accordance with the goal of national policy on education (2013) that vocational education gives training and impart the necessary skills to individual who shall be self reliant economically likewise give training and impart the necessary skills for the production of technicians, technologists and skilled personnel who shall be enterprising and self-reliant. The need for self-reliance of vocational and technological skill personnel made the government to introduce, adopt and implement skill acquisition programme in school to youths to enable them to be self employed and self-reliance (Obunadike, 20013). Furthermore, Iloma, Osaji and Atose, (2020) indicates that skills increases the chances for self reliance, provision of employable youths in the society.

## II. STATEMENT OF THE PROBLEM

It is obvious that Bayelsa State is a civil service state that solely depends on federal allocation to sustain its governmental obligations. When federal allocation for the state drops, it affects the economy of Bayelsa State and there will be delay in the governmental obligation such as prompt payment of workers' salaries, construction of projects among others. In addition, in order to curb governmental obligatory delays, the need for industrial revolution via vocational and technology education should be considered to improve the betterment of the state for sustainable livelihood. However, high rate of unemployment increases as students graduate yearly from tertiary institutions in the state, crime is a recurrent activity every citizen is

conscious off at all times that it might happen to anybody especially in the Yenagoa metropolis Bayelsa State. Some youths make asking of alms as a life style, instead of acquiring appropriate vocational and technological skills for sustainable development, they rather stand at busy junctions to beg passerby for financial help. Sincerely, vocational and technology education is capable of empowering youths for industrialization in the state to increase employment opportunities. The problem of the study therefore is, how is vocational and technology education a tool for industrialization in Bayelsa state, Nigeria.

a) *Purpose of the study*

The main purpose of this study was to determine vocational and technology education: a tool to industrialization in Bayelsa State Nigeria. Specifically, the study determines;

1. The extent vocational and technology education a tool to job creation for industrialization in Bayelsa State, Nigeria.
2. The extent vocational and technology education a tool to poverty alleviation for industrialization in Bayelsa State, Nigeria
3. The extent vocational and technology education a tool to self reliance for industrialization in Bayelsa State, Nigeria.

b) *Research Questions*

The following research questions guide the study.

1. To what extent does vocational and technology education a tool to job creation for industrialization in Bayelsa State, Nigeria?
2. To what extent does vocational and technology education a tool to poverty alleviation for industrialization in Bayelsa State, Nigeria?
3. To what extent does vocational and technology education a tool to self-reliance for industrialization in Bayelsa State, Nigeria?

c) *Hypotheses*

The following null hypotheses were tested at 0.05 level of significance.

$H_{o_1}$ : There is no significant difference in the mean ratings of male and female university graduates of vocational and technology education with respect to job creation for industrialization in Bayelsa State, Nigeria.

$H_{o_2}$ : There is no significant difference in the mean ratings of male and female university graduates of vocational and technology education with respect to poverty alleviation for industrialization in Bayelsa State, Nigeria.

$H_{o_3}$ : A significant difference does not exist in the mean ratings of male and female university graduates of vocational and technology education with respect to self reliance for industrialization in Bayelsa State, Nigeria.

### III. METHODOLOGY

The study adopted comparative survey research design aimed at vocational and technology education as a tool to industrialization in Bayelsa State, Nigeria. According to Bari (2021). is the act of comparing two or more thing with a view to discovery something about one or all of the things being compared.

The study was made up of 98 university graduates of vocational and technology education living in Yenagoa metropolis. The population consist 50 males and 48 females graduates of vocational and technology education. There was no sample technique, the whole population was used for the study. The instrument for data collection was a questionnaire. Titled: Vocational and Technology Education Industrialization Questionnaire (VTETIQ). The questionnaire have three research questions, each research question was sub-divided into four questions which made up twelve questions sought on information on Vocational and Technology education as a tool to job creation, poverty alleviation and self –reliance. The instrument consist of five point rating scale option with Very High Extent (VHE), High Extent (HE) Moderate Extent (ME), Low Extent (LE) and Very Low Extent (VLE). Using a cut-off mean of 3.00. The validity of the instrument was validated by three experts on face, content and construct respectively. The reliability coefficient was carried out using test-retest method. The administration of the (VTETIQ) instrument was administered twice within an interval of two weeks. The scores obtained from the administration of the instrument were subjected to Pearson Product Moment Correlation Coefficient which yielded 0.83. The data gathered was analyzed with mean and standard deviations to answer the research questions and the hypotheses were tested using z-test analysis at 0.05 level of significance.



*Research Question 1: To what extent does Vocational and Technology Education a tool to job creation for industrialization in Bayelsa State, Nigeria?*

*Table 1: Mean and standard deviation scores of male and female respondents on the extent of vocational and technology education as a tool to job creation for industrialization in Bayelsa State, Nigeria.*

S/N	Questionnaire items To what extent does:	University graduates of vocational and technology education						
		Male N = 50		Female N = 48		Overall analysis and decision		
		X	SD	X	SD	X	SD	Decision
1	University graduates of vocational and technology education produce consumable goods	3.95	1.11	3.50	1.27	3.75	1.19	High extent
2	University graduates of vocational and technology education become employers of labor	3.86	1.26	3.60	1.20	3.75	1.25	High extent
3	University graduates of vocational and technology education make their services useful	3.84	1.02	3.90	1.17	3.86	1.10	High extent
4	University graduates of vocational and technology education promote their products in the market	3.96	0.99	3.13	1.38	3.55	1.19	High extent
Grand Mean		3.90	1.10	3.53	1.30	3.73	1.18	High extent

*Source: field survey, 2021*

The data presented in table 1 reveals that the mean scores of 3.95, 3.86, 3.84 and 3.96 for male university graduates of vocational and technology education in Bayelsa State, Nigeria were greater than the cut-off mean score of 3.00. On the whole, the grand mean score of 3.90 was also greater than the cut-off mean score of 3.00. This implies that, there exist a high extent of vocational and technology education as a tool to job creation for industrialization in Bayelsa State, Nigeria.

The data also indicates that the mean scores of 3.50, 3.60, 3.90 and 3.13 for female university graduates of vocational and technology education in Bayelsa State, Nigeria were greater than the cut-off mean score of 3.00. On the whole, the grand mean score of 3.53 was also greater than the cut-off mean score of 3.00. This implies that, there exist a high extent of vocational and technology education as a tool to job creation for industrialization in Bayelsa State, Nigeria.

*Research Question 2: To what extent does Vocational and Technology Education as a tool to poverty alleviation for industrialization in Bayelsa State, Nigeria?*

*Table 2: Mean and standard deviation scores of male and female respondents on the extent of vocational and technology education as a tool to poverty alleviation for industrialization in Bayelsa State, Nigeria.*

S/N	Questionnaire items To what extent does:	University graduates of vocational and technology education						
		Male N = 50		Female N = 48		Overall analysis and decision		
		X	SD	X	SD	X	SD	Decision
5	Vocational and technological skills reduce poverty	3.70	1.11	3.83	1.19	3.77	1.15	High extent
6	Vocational and technological activities alleviate poverty	3.84	1.16	3.27	1.40	3.56	1.28	High extent
7	Vocational and technology education reduce unemployment in society	4.00	0.97	3.37	1.38	3.69	1.78	High extent
8	Vocational and technology education help to sustain livelihood	3.66	1.22	3.65	1.31	3.66	1.27	High extent
Total Mean		3.80	1.12	3.53	1.32	3.67	1.20	High extent

*Source: Field survey, 2021*

The data presented in table 2 revealed that, the mean score of 3.70, 3.84, 4.00 and 3.66 for male university graduates of vocational and technology education in Bayelsa State, Nigeria were greater than the cut-off mean score of 3.00. On the whole, the grand mean score of 3.80 was also greater than the cut-off mean score of 3.00. This implies that, there exist a high extent of vocational and technology education as a tool to poverty alleviation for industrialization in Bayelsa State, Nigeria.

The data also indicates that the mean scores of 3.83, 3.27, 3.37 and 3.65 for female university graduates of vocational and technology education in Bayelsa State, Nigeria were greater than the cut-off mean score of 3.00. On the whole, the grand mean score of 3.53 was also greater than the cut-off mean score of 3.00. This implies that, there exist a positive extent of vocational and technology education as a tool to poverty alleviation for industrialization in Bayelsa State, Nigeria.

*Research Question 3:* To what extent does Vocational and Technology Education as a tool to self-reliance for industrialization in Bayelsa State, Nigeria?

**Table 3:** Mean and standard deviation scores of male and female respondents on the extent of vocational and technology education as a tool to self-reliance for industrialization in Bayelsa State, Nigeria.

S/N	Questionnaire items To what extent does:	University graduates of vocational and technology education						
		Male N = 50		Female N = 48		Overall analysis and decision		
		X	SD	X	SD	X	SD	Decision
9	University graduates of vocational and technology education exercise confidence in skilled works	3.68	1.22	3.73	1.22	3.71	1.22	High extent
10	University graduates of vocational and technology education promote satisfaction when handling practical jobs	4.12	0.94	3.19	1.38	3.66	1.16	High extent
11	University graduates of vocational and technology education enhance individual abilities in practical jobs	3.40	1.26	3.52	1.28	3.46	1.27	High extent
12	University graduates of vocational and technology education enhance self actualization	3.74	1.24	3.81	1.09	3.76	1.17	High extent
Total Mean		3.74	1.17	3.56	1.24	3.65	1.21	High extent

Source: Field survey, 2021

The data presented in table 3 shows that, the mean score of 3.68, 4.12, 3.40 and 3.74 for male university graduates of vocational and technology education in Bayelsa State, Nigeria were greater than the cut-off mean score of 3.00. On the whole, the grand mean score of 3.74 was also greater than the cut-off mean score of 3.00. This implies that, there exist a positive extent of vocational and technology education as a tool to self-reliance for industrialization in Bayelsa State, Nigeria.

State, Nigeria were greater than the cut-off mean score of 3.00. On the whole, the grand mean score of 3.56 was also greater than the cut-off mean score of 3.00. This implies that, there exist a high extent of vocational and technology education as a tool to self-reliance for industrialization in Bayelsa State, Nigeria.

*a) Testing of Hypothesis*

*Research hypothesis Ho<sub>1</sub>:* There is no significant difference in the mean ratings of male and female university graduates of vocational and technology education with respect job creation for industrialization in Bayelsa State, Nigeria.

The data also indicates that the mean scores of 3.75, 3.19, 3.52 and 3.81 for female university graduates of vocational and technology education in Bayelsa

**Table 4:** Z-test analysis of male and female respondents on the extent of vocational and technology education as a tool to job creation for industrialization in Bayelsa State Nigeria.

University graduates in vocational & technology education	N	df	z-cal	z-critical	p < @ 0.05
Male	50				
Female	48	96	1.52	1.96	Not significant

NS = Not significant, df. 96, N<sub>m</sub> = 50, N<sub>f</sub> = 48

The data in table 4 shows that the z – test analysis is not significant at p < 0.05 alpha level

because the calculated z-value of 1.52 is less than the critical table z-value of 1.96 at 0.05 alpha level with 96

degrees of freedom. Hence, the null hypothesis which states that, there is no significant difference between male and female university graduate of vocational and

technology education as a tool to job creation for industrialization in Bayelsa State, Nigeria is accepted.

*Research hypothesis Ho<sub>2</sub>*: There is no significant difference in the mean rating of male and female University graduates of vocational and technology education with respect poverty alleviation for industrialization in Bayelsa State, Nigeria.

**Table 5:** Z-test analysis of male and female respondents on the extent of vocational and technology education as a tool to poverty alleviation for industrialization in Bayelsa State Nigeria.

University graduates in vocational & technology education	N	Df	z-cal	z-critical	p < @ 0.05
Male	50				
Female	48	96	1.08	1.96	Not significant

NS = Not significant, df. 96, N<sub>m</sub> = 50, N<sub>f</sub> = 48

The data in table 5 shows that the z – test analysis is not significant at p < 0.05 alpha level because the calculated z-value of 1.08 is less than the critical table z-value of 1.96 at 0.05 alpha level with 96 degrees of freedom. Hence, the null hypothesis which

states that, there is no significant difference between male and female university graduate of vocational and technology education as a tool to poverty alleviation for industrialization in Bayelsa State, Nigeria is accepted.

*Research hypothesis Ho<sub>3</sub>*: A significant difference does not exist in the mean rating of male and female university graduates of vocational and technology education with respect to self reliance for industrialization in Bayelsa State, Nigeria.

**Table 6:** Z-test analysis of male and female respondents on the extent of vocational and technology education as a tool to self reliance for industrialization in Bayelsa State Nigeria.

University graduates in vocational & technology education	N	df	z-cal	z-critical	p < @ 0.05
Male	50				
Female	48	96	0.74	1.96	Not significant

NS = Not significant, df. 96, N<sub>m</sub> = 50, N<sub>f</sub> = 48

The data in table 6 shows that the z – test analysis is not significant at p < 0.05 alpha level because the calculated z-value of 0.74 is less than the critical table z-value of 1.99 at 0.05 alpha level with 96 degrees of freedom. Hence, the null hypothesis which states that, a significant difference does not exist in the mean rating of male and female University graduates of vocational and technology education with respect to self reliance for industrialization in Bayelsa State, Nigeria is upheld.

Furthermore, table 5 shows that there is no significant difference between male and female university graduates of vocational and technology education in respect to poverty alleviation for industrialization in Bayelsa State, Nigeria. However, this study is in agreement with Iloma, Osuji & Atose (2020) who carried out a study on youth empowerment and entrepreneurial competencies through innovations and research in industrial technical education (ITE) for poverty eradication and sustainable national development. The study identified that job shadowing is a strategy for youth development and entrepreneurial competencies.

#### IV. DISCUSSION OF FINDINGS

The result in table 4 indicates that there is no significant difference between male and female University graduates of vocational and technology education respondents with respect to job creation for industrialization in Bayelsa State, Nigeria. This is in consonance with Obunadike (2013) who carried out an investigation on entrepreneurship skill acquisition for wealth creation of youths in Ihiala, Anambra State. The study discovered 155 skills items required for training Senior Secondary School graduates in oil palm nursery enterprise for economic success and wealth creation. Therefore, it implies that vocational and technology education contributes to industrialization in Bayelsa State.

In addition, the result in table 6 shows that there is no significant difference between male and female University graduates of vocational and technology education respondents with respect to self reliance for industrialization in Bayelsa State, Nigeria .This finding is in agreement with Elogbo (2013) who carried out a study on the role of Technical, Vocational Education and Training in job creation. The study highlighted that vocational and technical education is a practical skill oriented program for learning that prepares the trainees for self reliance.

It is imperative to state that the respondents agreed to a high extent that Vocational and Technology

Education is a tool to industrialization in Bayelsa State, Nigeria with respect to job creation, poverty alleviation and self-reliance.

## V. CONCLUSION

The study discovered that vocational and technology education is considered as a tool to industrialization in Bayelsa State, Nigeria with respect to job creation, poverty alleviation and self-reliance. However, from the study it was revealed that vocational and technology Education have a positive extent in the development of youths and the state at large. When the youths of a state is equipped with the necessary skills that shall add indelible meaning to their lives, the state develop drastically because the youths of the state are engaged in meaningful ventures.

## VI. RECOMMENDATIONS

1. Bayelsa state government should invest more in vocational technology education to encourage youths to venture into it.
2. Vocational and technology education should be given a top priority in the state educational system.
3. Grants should be given to university graduates of vocational and technology education to encourage consumer's goods production in the state.

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