



ENHANCING THE PERFORMANCE OF FINAL YEAR TECHNOLOGY EDUCATION UNDERGRADUATE STUDENTS OF UNIVERSITIES FOR SUSTAINABLE NATIONAL DEVELOPMENT.

Oguejiofor Victor Ikechukwu Ph.D.

Department of Mechanical Engineering, University of Nigeria, Nsukka

Abstract: *The study examined the strategies for enhancing the performance of final year Technology Education Undergraduate Students of Universities in Enugu State for sustainable national development. The study was conducted at two public Universities in Enugu State that run technology education. The population for the study was 150 final year undergraduate students. A simple random sampling technique was used to select a sample of 50 respondents made up of 17 female and 33 male students. The instrument for data collection was structured questionnaire constructed by the researcher. The return rate of the instrument was 98%. Three experts from Faculty of Education, University of Nigeria Nsukka validated the instruments. A pilot study of 3 females and 8 males undergraduate students were conducted at Nnamdi Azikiwe University Awka, Anambra State. Cronbach Alpha technique was used to test for the reliability. The reliability coefficient of the instrument was 0.76. Two research questions and two null hypotheses guided the study. Mean and standard deviation were used to answer the research questions, while t-test analysis was employed to test the null hypotheses at .05 level of significance. The study revealed that all the teachers and government roles indentified in this study are the strategies for enhancing the performance of final year Technology Education undergraduate Students of Universities in Enugu State for sustainable national development. It was recommended that teachers and the government should play their roles effectively in the Universities to enhance the performance of undergraduate students of technology education for sustainable national development.*

Key words: Enhancing, performance, technology education, sustainable development

Introduction

Education is a valuable investment in the production of human resources for sustainable development of any nation. It empowers nations and gives them economic gain. It is the bedrock of national development. (Agboola, 2015). No nation can grow beyond the education level of her leader. It is a catalyst to national development. It polishes and empowers the mind to be productive. It has

been designed to assist people to develop their skills and talent to be responsible citizens who shall contribute meaningfully to national development. It is a tool that equipped people to contribute to social, economic, political and cultural development (Ebirim, 2011). Education is the wheel through which the economy and development of any nation depends. It is an essential tool for achieving

British International Journal of Education And Social Sciences

An official Publication of Center for International Research Development

Double Blind Peer and Editorial Review International Referred Journal; Globally index

Available @CIRD.online/BJESS: E-mail: bijess@cird.online



sustainable development that leads to global peace. It enhances performance.

Enhancing is the activities undertaken to increase the value and quality that are needed. Enhancement is to improve the quality of something to give the desired result. It is an increase in the quality of something. According to Walter (2019) enhancement is anything done for an improvement to the quality or value of something. It is activities undertaken to make things better. It is the process of improving the quality, amount or strength of something for a better result. It is a change or process of change that increase the value of something. Enhancement breeds performance in technology education.

Technology education is education for national development. It is an education for innovation. Technology education is the study of technology in which students learn the processes and knowledge related to technology and how to use it to solve human needs. It is education for self-reliant (Wakefield, 2015). A 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 contributes to the students overall scientific and technological literacy and trenchancy (Blandow, 1994). Technology education helps in developing in students the skills of identifying the relevant contextual factors needed to make value-based decisions in the designing, implementing and evaluation of technology in situation that are ethically complex. It enables teachers and students to find a new conclusion of daily life problem. It helps to create better living, learning, products and services. It helps to create a new and innovative ways of doing things .It inspired students to be creative and to contribute meaningfully to national development (Sharma, 2016).

National development is a process of improving the range of opportunities that will enable individual human and communities to achieve the aspirations and full potential over a sustained period of time while maintaining the resilience of economic, social and political

development (Collins, 2011). Sustainable national development is the development that is geared towards the enhancement of individuals in the economy and which would also enhance the development of the nation and such development should be sustainable over time. It involves three fundamental components which include: environmental protection, economic growth and social equity. According to Vaizey (1984) national development is the total effect of all citizen forces and addition to the stock of physical, human resources, knowledge and skills. According to United nations report (2015) national development is the growth plus change in turn in social, cultural as well as economic and qualitative as well quantitative. It is a multidimensional undertaking to achieve a higher quality of life for all people. It is the ability of a country to improve the social welfare of the people.

Statement of problem

Technology education is an education that gives the students the skills and knowledge for them to contribute maximally and effectively to national development on graduation. Unfortunately most students on graduation contribute nothing to national development due to inability of the government to provide the necessary amenities and support to the universities that run technology education and inability of some lecturers to perform technological teaching roles. In view of the above therefore, it becomes imperative to carry out a study on enhancing the performance of final year technology education undergraduate students of Universities for sustainable national development. The problem of this study is what are the strategies for enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.

The purpose of the study

The purpose of the study was to determine the strategies for enhancing the performance of final year technology education undergraduate students of Universities in



Enugu State for sustainable national development.

Specifically, the study sought to determine:

1. the roles of lecturers in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.
2. the roles of government in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.

Research Questions

The following research questions guided the study.

1. What are the roles of lecturers in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development?
2. What are the roles of government in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development?

Null Hypotheses

The following null hypotheses were tested at .05 level of significant.

H0₁: There is no significant difference between the mean responses of male and female students on the roles lecturers play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.

H0₂: A significant difference does not exist between the mean responses of male and female students on the roles the government plays in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.

Method

The study adopted survey research design. This was in line with Osuala (2009) who opined that a survey research design is one in which a group of people or items are

studied by collecting and analyzing data from a few people or items considered to be representative of the entire population. The study was conducted in the public Universities in Enugu State, Nigeria that run technology education programmes. Enugu State, is located on the latitude of 6^o 30 North and on the longitude of 7^o 30 East. The population for the study was 150 final year technology education undergraduate students of universities in Enugu State. A simple random sampling technique was used to select a sample of 50 respondents made up of 17 female and 33 male undergraduate students.

The instrument for data collection was a structured questionnaire developed by the researcher using a four point responses scale of very great extent (4), great extent (3), low extent (2) and very low extent (1). The instrument was face validated by three experts from University of Nigeria, Nsukka, two from Technology Education, and one from measurement and evaluation.

Pilot study of three (3) female and eight (8) male undergraduate students were conducted at Nnamdi Azikiwe university Awka, Anambra State. Cronbach Alpha technique was used to test for the reliability. The reliability coefficient of the instrument was 0.76. Two research questions and two null hypotheses guided the study. Mean and standard deviation were used to answer the research questions, while t-test analysis was employed to test the null hypotheses at .05 level of significance. The instrument was administered by hand with the aid two research assistants. The return rate was 98%.

Result

The result of the study were analyzed and presented based on the research questions and hypotheses that guided the study. The details are contained in the tables 1 - 4.

Research Question One

What are the roles of lecturers in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development?



Table 1

Mean Ratings and standard deviation of roles of lecturers in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State subsumable national development.

S/N	Item statement	X		SD		Decision	
		M	F	M	F	M	F
1	Use of adequate instructional materials and teaching aids	3.90	3.60	0.29	0.56	VGE	VGE
2	Use of adequate teaching method	3.76	3.50	0.14	0.48	VGE	VGE
3	Understand workshop management in technology education	3.88	3.65	0.57	0.61	VGE	VGE
4	Adequate instructional delivery	3.60	3.70	0.49	0.47	VGE	VGE
5	Motivation	3.90	3.50	0.30	0.51	VGE	VGE
6	Adequate supervision	3.80	3.47	0.39	0.51	VGE	GE
7	Good lecturer-student relationship	3.85	3.40	0.36	0.50	VGE	GE
8	Good classroom management	3.79	3.50	0.41	0.50	VGE	VGE
9	Good use of technology workshop	3.53	3.70	0.45	0.50	VGE	VGE
10	Adequate manipulative skills during instruction	3.90	3.60	0.48	0.63	VGE	VGE
11	Technical expertise with all the technical tools during instruction delivery	3.80	3.50	0.42	0.50	VGE	VGE
12	Mastery of subject area before instruction	3.85	3.40	0.36	0.50	VGE	GE
Grand mean		3.79	3.54	0.38	0.49	VGE	VGE

Note: F= Female undergraduate students = 17, M = Male undergraduate students = 33, X =Mean and SD = Standard deviation

The data presented in **Table 1** showed that both respondents agreed that all the items indentified are the roles of lecturers in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development. Their mean and grand mean was above 2.50 which is the bench mark. The males agreed to very great extent (VGE) for all the items, while the females agreed to very great extent (VGE) for nine items and great extent (GE) for three items.

Null Hypotheses One

There is no significant difference between the mean responses of male and female students on the roles teachers play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.



Table 2

t-test of difference between the Mean Rating of male and female students on the roles lecturers play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for subsumable national development.

Respondent (students)	N	\bar{X}	SD	Df	t-cal	t-crit	Decision
Males	33	3.79	0.38	48	1.54	±1.96	NS
Females	17	3.54	0.49				

Note: N = number of respondents, \bar{X} = mean, SD = standard deviation and NS = Not Significant

The data in **Table 2** showed that t–calculated of 1.54 is less than t-critical (±1.96) therefore, there is no significant different between the mean responses of male and female students on the roles teachers play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.

Research Question Two

What are the roles of government in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development?

Table 3

Mean Ratings and standard deviation of roles of the government in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.

S/N		X		SD		Decision	
		M	F	M	F	M	F
14	Increasing the technology education workforce of the universities	3.90	3.60	0.29	0.56	VGE	VGE
15	Ensure that technology education curriculum is employable skill based	3.76	3.50	0.40	0.48	VGE	VGE
16	Provision of current and functional laboratory	3.88	3.65	0.56	0.61	VGE	VGE
17	Provision of current and functional workshop	3.60	3.70	0.49	0.47	VGE	VGE
18	Adequate provision of state of the art tools and equipment	3.90	3.50	0.30	0.51	VGE	VGE
19	Training and re-training of technical staff.	3.80	3,47	0.39	0.51	VGE	GE
20	Effective funding of technology education in the universities.	3.85	3.40	0.36	0.50	VGE	GE
21	Constant power supply	3.79	3.50	0.41	0.50	VGE	VGE
22	Provision of all necessary social amenities	3.70	3.35	0.45	0.63	VGE	GE
23	Adequate payment of salary and allowances	3.66	3.35	0.48	0.66	VGE	GE
Grand mean		3.78	3.50	0.37	0.54	VGE	VGE

Note: F= Female undergraduate students = 17, M = Male undergraduate students = 33, X =Mean and SD = Standard deviation



Data in **Table 3** showed that the respondent have high mean ratings for all the items for roles of the government in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.

The mean values and the grand mean for the two groups of the respondents were above the bench mark of 2.50. The males agreed to very great extent (VGE) for all the items, while the females agreed to very great extent (VGE) for six items and great extent for four items

Null Hypotheses Two

A significant difference does not exist between the mean responses of male and female students on the roles the government play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.

Table 4

t-test of difference between the Mean Rating of male and female students on the roles the government play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.

Respondent (students)	N	\bar{X}	SD	Df	t-cal	t-crit	Decision
Males	33	3.78	0.37	48	2.00	±1.96	S
Females	17	3.50	0.54				

Note: N = number of respondents, \bar{X} = mean, SD = standard deviation and S = Significant

The data in **Table 4** showed that t-calculated of 2.00 is greater than t-critical which is ±1.96, therefore there is a significant difference between the mean responses of male and female students on the roles the government play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development.

Discussion of Findings

The grand mean (x) for the two groups of the respondents in the research question one was above 2.50, showing that the use of adequate instructional materials and teaching aids, adequate teaching method, understand workshop management in technology education, adequate instructional delivery, motivation, adequate supervision,

good lecturer-student relationship, good classroom management, good use technology workshop, adequate manipulative skills during instruction, technical expertise with all the technical tools during instruction delivery and mastery of subject area before instruction are the roles lecturers should play to enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for subsumable national development. The males agreed to very great extent (VGE) for all the items, while the females agreed to very great extent (VGE) for nine items and great extent (GE) for three items.

In research question two the grand mean for the two groups of the respondent was above 2.50, showing that increasing the technology education workforce of the universities,



ensure that technology education curriculum is employable skill based, provision of current and functional laboratory, adequate provision of state of the art tools and equipment, training and re-training of technical staff and effective funding of technology education in the universities, constant power supply, provision of all necessary social amenities, adequate payment of salary and allowances are the roles the government should play to enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development. The males agreed to very great extent (VGE) for all the items, while the females agreed to very great extent (VGE) for six items and great extent (GE) for four items.

The closeness of the responses by the respondents as shown by the standard deviation (SD) indicates homogeneity in their response. Testing of hypothesis one as shown in table 1 revealed that there is no significant different between the mean responses of male and female students on the roles lecturers play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for subsumable national development. The t-calculated of 1.54 was less than t-critical of ± 1.96 . Testing of hypothesis two as shown in table 4 revealed that there is significant difference between the mean responses of male and female students on the roles government play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for subsumable national development. The t-calculated of 2.00 was more than t-critical of ± 1.96 .

Conclusion

Based on the results of the study it was concluded that the performance of final year technology education undergraduate students of Universities can be enhanced for sustainable national development in Enugu State, Nigeria if the government plays their roles effectively by providing the necessary amenities, equipments and tools to Universities that run technology education and welfare to

lecturers. Also the use of adequate instructional materials and teaching aids, teaching method, instructional delivery, motivation, adequate supervision, good lecturer-student relationship, good classroom management, adequate manipulative skills during instruction, technical expertise with all the technical tools during instruction delivery and mastery of subject area before instruction by the lecturers will enhance the performance of final year technology education undergraduate students of Universities for sustainable national development in Enugu State, Nigeria. There is no significant different between the mean responses of male and female students on the roles lecturers play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for sustainable national development. There is significant different between the mean responses of male and female students on the roles the government play in enhancing the performance of final year technology education undergraduate students of Universities in Enugu State for subsumable national development.

Recommendations

Based on the result of this study, the following recommendations were made:

1. The government should play their roles effectively by providing the necessary amenities, equipments, tools, welfare and training to the Universities that run technology education in order to enhance the performance of undergraduate students of technology education for sustainable national development.
2. Lecturers should play their roles effectively by using the right method, teaching aid, supervision and motivation in the Universities in order to enhance the performance of undergraduate students of technology education for sustainable national development.
3. The stakeholders, philanthropist and government should encourage technology education lecturers



through enhance payment of salaries and allowance of when due and a regular training and re-training of technology education lecturers.

References

- Agboola, B.(2015).*Fundamental of education management*.UK: Robert Minder International.
- Blandow, D. (1994). *Technology education in schools and industry*. Berlin:Springer-verlag.
- Collins.(2011). *Collins English Dictionary*.UK: Harper Collins Publishers Ltd
- Osuala,E.C. (2009).*Foundation of vocational education*. Nsukka: Fulladu Publishers co.
- United Nations report (2015). Retrieved from <http://www.un.org> on 28th January,2020.
- Uzodinma, C.U. and Obayi,T.U.(2015).*The economics of vocational and technical education for Nigeria*.Enugu: Bob Billion Publishers.
- Walter, E..(2019).*Cambridge advanced learner's Dictionary*.UK: Cambridge University Press.
- Wakefield, J. (2015).*How technology is changing schools*. Retrieved from <https://books.google.com> 28th January,2020.
- Sharma,V. (2016).*Technology education*.Retrieved from <http://www/cs.ucf> 28th January,2020.
- Ebirim,U.(2011).*The need for curriculum reforms in distance education programme*. Research of CUDMAC 3 (1), 17-19.
- Nworgu, B.G.(2015). *Educational Research*. Nsukka: University Trust publishers.
- Vaizey,J.E. (1984).Sustainable development. Retrieved from en.m.wikipedia.org on 10th Febuary,2020.