

# 22

## RELEVANCE OF TECHNICAL AND VOCATIONAL EDUCATION TO ENVIRONMENTAL PROTECTION IN NIGERIA

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### **Abstract**

*The relevance of Technical and Vocational Education (TVE) to environmental protection in Nigeria came as a result of the introduction of contaminants into an environment called environmental pollution. This causes instability disorder and discomfort to physical systems or living organisms. The release of chemicals and particles from industries and factories cause air pollution. Every single day, tons and tons of domestic waste is dumped, the pall of smoke and the swirling gases cause constant hazards, polluting both air and water. The study therefore tried to convince Nigerians public that TVE can provide necessary safeguard arrangement against environmental pollution in Nigeria if the graduates of TVE programmes are well utilized. In view of this, the scope of TVE had been reviewed to bring out those indicators necessary for maintaining clean environment in Nigeria. The population comprised of 120 year II and II Technical Education departments' students from University of Uyo and Akwa Ibom State College of Education, Afaha Nsit was sampled. The instrument used for the data collection is structured questionnaire with 35 items which were analyzed using mean and frequency distribution. It was found among others that environmental pollution in Nigeria, is mostly caused by lack of necessary machineries, facilities and workforce to clear heaps of waste materials along Nigerian roads/streets.*

### **Introduction**

Environmental protection is a practice of protecting the environment, on individual basis or governmental level, for the benefit of humanity,. Due to the pressures of population and our technology the biophysical environment is being degraded sometimes permanently (USEPA, 2008). Academic institutions now offer courses such as environmental studies, environmental management and environmental engineering that study the history and methods of environmental protection. According to Santos (1990), protecting the environment is needed from various human activities such as waste pollution, loss of biodiversity, introduction of invasive species, release of genetically modified organism and toxics are some of the issues relating to environmental protection.

Keerthy (2009) contended that many constitutions acknowledge the fundamental right to environmental protection and many international treaties acknowledge the right to live in a healthy environment. But complete, environmental protection seems impossible at this current global position since the start of the industrial revolution which had been a fact of life for many countries, but it became a real problem. The introduction of contaminants into an environment is called environmental pollution (Kemp, 1998). Due to environmental pollution instability, disorder, harm or discomfort to the physical systems or living organisms are caused. The noise, heat, light, water and chemical substances are polluted day by day. Kemp (1998) stated that environmental pollution is the contamination of the physical and biological components of earth/atmosphere system to such an extent that normal environmental processes are adversely affected.

Pollution is the introduction of contaminants' into the environment that causes harm or discomfort to humans or other living organisms or that damage the environment. Pollution is a special case of habitat destruction. It occurs in all habitat, land, sea and fresh water and in the atmosphere. Any use of natural resources at a rate higher than nature's capacity to restore itself can result in pollution of air, water and land.

Kemp (1998) contended that air pollution, water pollution and soil pollution are three dioxides, nitrogen dioxide, carbon monoxide, ozone, volatile organic compounds (VOC) and airborne particles. Water pollutants include insecticides and herbicides, food processing waste, pollutants for livestock operations, heavy metals, chemical water hydrocarbons, solvents and heavy metals.

Santos (1990) noted that a very important aspect of the effect of pollution is its dose or concentration required to cause environmental damage. Santos (1990) defines pollution response as the change in the effect of a pollutant in response to a change in its concentration. There is no doubt that excessive levels of pollution are causing a lot of damage to human and animal health, plants and trees as well as the wide environment. All types of environmental pollution- air, water and soil have an impact on the living environment.

Technical and Vocational Education programmes are the surest and potent road-map for protecting the environment since its components formed the fundamental basis of technological development in all aspect of human endeavours. Okoro, (1993) stated that Vocational/Technical Education is despised to develop skills, abilities, understanding, attitudes, work habits and appreciation encompassing knowledge and information needed by workers, to enter and make progress in employment on a useful and PRODUCTION BASIS. Doolittle and Camp (1999) added that vocational technical education is meant to prepare vocational education graduates for skilled position in the workplace and for self-reliance. Vocational Technical Education cuts across all human endeavours especially in the maintenance of healthy environments of the nation such as Nigeria: since environment is God's gift of nature through which we make goods, so we should take care of it and save it.

### **State of the Problem**

Our planet earth affects from other planets in having an environment. The biosphere in mwhich living beings have their sustenance has oxygen, nitrogen, carbon dioxide, organ and water vapour. All these are well balanced to ensure a healthy life in the world. The introduction of contaminants into an environment called environmental pollution causes instability disorder harm or discomfort to the physical systems or living organisms. The noise, heat, igh, waterand chemical substances are getting polluted day by day (Mahak, 2009). These environmental disturbances need to be addressed for human being to have a healthy living.

Many crusades are vehemently protesting against environmental pollution no life is safe, we can very well notice the abnormal behaviour of our seasons. But, it is heartening to find that entire world is aware of the menace and all the couneries are ready to fight against environmental polution. The pesticides are herbicides used by farmers also pollute the land. The industrial actuvities are contributing for environmental pollution very much mining wastes also contaminate the soil. The smoke Jeft by automobiles and other vehicular traffic, the use of synthetic detergents, nitrogen fertilizers cause environmental pollution. If we fail to restore the ecological balance right now. it would be too late tomorrow. So, everybody should organize the activites in such a way to drive the environmental pollution from earth by so doing the Nigerian Government can thought of protecting the environment. This could be addressed by Technical and Vocational Education graduates outcomes If this research work will be implemented.

### **Purpose of the Study**

The major purpose of the study is to ascertain the relevance of Technical and Vocational Education to environmental protection in Nigeria, specially the study is aimed at:

1. Determining how environmmental protection could be maintained in Nigeria
2. Find out the likely causes of environmental pollution in Nigeria.
3. Ascertaining how technical and vocational education could intervene In protecting the environment in Nigeria.

### **Research Questions**

The following research questions were formulated to guide the study.

- 1 Howcould environmental protection be maintained in Nigeria?
2. What are the likely causes of the environmental pollution in Nigeria?
- 3 How could Technical and Vocational Education intervene in protecting the environment in Nigeria?

## **Methodology**

### **Research Design**

The study was a description survey design that focused on investigating through the use of a questionnaire items

### **Area of Study**

The study was carried out in only the Federal and State Government owned tertiary institutions in Akwa Ibom State because tertiary institutions in Nigeria are mostly owned by the Federal and State Government

### **Population of the Study**

The population of the study comprise all the 537 NCE (Technical) II and III and Degree (Technical) year II and III students from the two selected tertiary institutions.

### **Sample and Sampling Techniques**

The sample for the study was 120 students, To select the sample, stratified random sampling was adopted 59 year II and III degree students in the Department of Technical Vocational Education, University of Uyo and 73 year II and III NCE (Technical) students in Technical Education Department, Akwa Ibom State College of Education, Afaba Nsit. The total number of students were 132.

### **Instrument for Data Collection**

The instrument used for the study was questionnaire, which consists of 35 items designed to elicit information that relates to the research questions of the study.

### **Validation**

The validation of the instrument was done by two lecturers from technical education department, University of Uyo.

### **Reliability of the Instrument**

A test-retest reliability test was used to ascertain if the instrument was reliable. A correlation coefficient of 0.87 was obtained from the administration. Thus, the instrument was reliable.

### **Methods of Data Collection**

On the spot method was adopted in collecting data to curb instrument mortality. Hence, instruments collected were 120 out of 132 with the help of 3 research assistants.

### **Method of Data Analysis**

Percentage, frequency and mean statistics. Each of the response categories was assigned values such as: Strongly Agree (SA) -4; Agreed (A) - 3; Disagree (D) -2; Strongly Disagree (SD) - 1; in taking decision, a mean of 2.5 and above was considered accepted and a meanless than 2.5 is rejected.

### **Research Question 1**

How could environmental protection be maintained in Nigeria? To answer the above research question, items seeking to find out how environmental protection could be maintained in Nigeria were administered to respondents. The mean responses of the respondents were computed and presented in Table 1 below.

### **Finding of the Study**

- 1 Environment is God's gift of nature through which we make goods, so we should take care of it and save it.
2. Environmental protection involves both individual and government for a successful work to be done.
3. Academic institutions now offer courses such as environmental studies, environmental management and environmental engineering that study the history and methods of environmental protection of a nation.
4. The introduction of contaminants into an environment brought about environmental pollution.
5. The three major types of pollution are air pollution, water pollution and soil pollution.
6. TVE programmes are the surest and potent road-map for protecting the environment in Nigeria.

### **Discussion of the Findings**

The findings of this study generally shows the extent Nigerian government through the Ministry of Environment AND Regional Planning protests the environment is above average. This is indicated by the inclusion of environmental studies, environmental management and environmental engineering in her school curriculum for students to study the history and method of environmental protection (Santos,I990). The provision of machineries, facilities and workforce in towns/villages in Nigeria is inadequate which need to be addressed.

The reasons for environmental pollution were seen to be one by one, due to urbanization, forests are destructed. Also, excessive level of pollution causes a lot of damage to human and animal health, plants and trees as well as the wide environment (Garvey, 2008).

TVE programmes cut across all stages of clearing heaps from our environment without much human energy being wasted.

The finding shows that packaging of products sold in supermarket and other retail outlets is far too excessive and generates large quantities of solid waste that ends up either in landfills or municipal incinerators leading to soil contamination and air pollution. If the Nigerian government through ministry of environment and regional planning utilizes TVE manpower effectively this problem would have been addressed.

### **Summary and Conclusion**

This study-Relevance of Technical and Vocational Education to environmental protection in Nigeria was carried out to ascertain the extent of how degradation could be maintained in Nigeria was determined; likely causes of environmental pollution in Nigeria were ascertained. Furthermore, how TVE could intervene in protecting the environment in Nigeria were also highlighted.

The findings of this study will serve as the basis for making the following conclusions:

1. Protecting the environment is a collective effort of government and individual.
2. The causes of degradation of environment were as a result of the introduction contaminants into an environment called environmental pollution.
3. Technical and Vocational Education programmes product could produce needed machineries and facilities to ease the evacuation of heaps of waste materials in Nigerian town/villages.

### **Recommendations**

Based on the findings of this study, the following recommendations are made:

1. Urgent action is needed to arrest the degradation of environment in Nigeria.
2. There is need to formulate and put in place a National Environmental Policy which could safe as a guide on how to keep our environment clean and tidy at all times.
3. Environmental protection programmes should be incorporated in the curricula of all levels of education in Nigeria from primary to the university.
4. Environmental and Regional Planning department of tertiary institutions should be strengthened to admit more students who will be trained on the history, method and protection of the environment.
5. More refuse evacuated equipment should be provided and kept at strategic locations for dumping of refuse or waste product for easy evacuation by the relevant authorities.

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