

Environmental Adult Education and Air Pollution Control: A Step Towards Value Re-Orientation

Kpeno Amon EPHRAIM

Department of Curriculum Studies/Instructional Technology
Faculty of Education
Ignatius Ajuru University of Education, Nigeria
kpenoephraim@yahoo.com

Abstract

This paper seeks to bring the individuals in the society to the knowledge of environmental adult education; a process of developing in adults certain attitudes, skills and knowledge that could enable them to successfully interact and live in harmony with the external forces and elements that surround them as they engage in their daily activities for survival and believe that this knowledge and the importance of EAE discovered will change the orientation they had about the environment. In the same vein, their knowledge about air pollution, the effect of pollution and the exposition of the consequences of their activities will bring about changes in their attitude so that they begin to interact sustainably and friendly with the environment and grow environmentally to fight for the protection of the environment. This paper also guides on the possible means to control air pollution to avoid the fatal consequences which accompany air pollution in the environment. It also recommended that superior officers and subordinates of the military, paramilitary, industries, private and cooperate bodies involved in causing air pollution be involved in environmental adult education in order to curb the issue of environmental degradation like air pollution in the society.

Keywords: Environmental Adult Education (EAE), Air Pollution Control, Value Re-Orientation.

INTRODUCTION

The condition of the environment today due to man's activities has created worries in the minds of Nigerians. It has also created fears making one to think about what would happen next. The dangers of air pollution are so enormous that it is difficult for one to know who is lined up as the next victim. It may be of interest to note that the perpetrators of these unfriendly dealings with the environment are mostly the educated elites of this nation. A critical look at most of the anthropogenic activities in our society which are carried out or directed by some of our big men (in quote) could be surprising. This is because the ones we expect to be educated are the ones who degrade the environment at the detriment of lives and properties, even theirs whereas one would have blamed the activities on illiterate folks alone.

Environmental literacy no doubt has categorised every individual in the society and makes it clear that every individual in the society could be graded to belong to one level of environmental literacy or another. Therefore, it is not surprising to note that an educated man/woman can degrade the environment without a feeling of remorse. It is on this note that environmental adult education is considered a more veritable tool to educate the public; both

educated and non-educated citizens of the nation, especially the adults and youths who have a lot to do with environmental degradation. In the same manner, they will come to know the importance of the environment and develop love and concern for it and thereby learn to interact sustainably with the environment for posterity. If the adults and youths are educated about the environment, there will be a change in their attitude towards the environment. This paper would do a lot of Nigerians good as their state of environmental illiteracy will be exposed to them. In the same vein, the enormity of their activities will be opened and the right directions will be exposed to avoid or much degradation which both the stack illiterates and the educated environmental illiterates have been doing against the environment.

The purpose of this article is to evaluate activities that cause pollution such as the burning of petrol tankers, burning of illegal bunker's equipments and camps, and many more unfriendly and unwholesome activities that have been working against the environment in the area of air pollution shall be exposed. The dangers of air pollution and also what needs to be done to effect change in the attitude of the adults and youths for a better way of interaction with the environment for protection of lives, property and the entire ecosystem shall also be exposed. This paper is interested in the exposure of more unfriendly actions such as the operation of the Custom officers who burn whatever they call illegal or "contraband goods" imported into the country (attendant factors of air pollution) that are ravaging the atmosphere thereby causing environmental pollution and endangering lives. These activities are acts that endanger the lives of the citizens as air pollution goes a long way to cause discomfort to human and animals in the environment. Example of this is the soot and ash that we have been inhaling in Port Harcourt for some months now. Everybody's life is at risk because nobody knows the way and manner the effect will show up. EAE, an education that soothes the re-orientation of the adults and youths need to be given a prominent recognition to enable everyone become aware of environmental issues, develop love and concern for the environment; and also grow to the level of fighting for the environment for the betterment of all. It is necessary to know that human beings are all co-owners of the environment together with other components of the ecosystem so that none is expected to hurt each other.

Environmental Adult Education (EAE)

EAE in laymen's terms refers to effort in teaching environmental issues and how individuals and businesses can change their lifestyles and manage the ecosystem to live sustainably (Wikipedia, 2012). It is the education ABOUT, IN and FOR the environment (Kimaryo, 2011); an educational approach that moves the individuals to develop an attitude of concern, values and behaviour capable of protecting the environment in all areas of his dealings avoiding degradation and any form of devastation. It is a synthesis of environmental education and adult education. It is an applied environmental education within the context of adult education.

According to Summer (2003), environmental adult education is recognised as a "hybrid outgrowth of the environmental movement and adult education, combining an ecological orientation with a learning paradigm to provide a vigorous educational approach to environmental concerns." In laymen's terms, EAE is referred to as efforts in teaching environmental issues and how individuals and businesses can manage or change their lifestyles and ecosystems to live sustainably.

Eheazu (2009) defined environmental adult education as a process of developing in adults certain attitudes, skills and knowledge that could enable them to successfully interact and live in

harmony with the external forces and elements that surround them as they engage in their daily activities for survival. EAE religiously looked at education that exposes both youths and adults to the knowledge of what the environment is; why they need the environment, what harm they have been doing to the environment, how they should interact with the environment, what they need to do to remedy the harm created and how to live to be friendly with and sustain the environment for posterity. By this knowledge man would therefore know that he needs the environment to survive and to also live comfortably.

IMPORTANCE OF ENVIRONMENTAL ADULT EDUCATION

The importance of EAE could be seen in the following directions and many more:

- EAE helps the adults to become aware of and become sensitive to the total environment and its allied problem. This awareness and sensitivity will enable the adults to know what harm they may be doing to themselves and the environment through their various activities.
- EAE will help the adults to gain knowledge about the environment and be able to differentiate from their experiences and acquire such understanding that will discourage them from dealing with the environment in a manner that contributes to the problems the environment is experiencing now.
- Through EAE, the adults will begin to place values and develop a positive feeling of concern for the environment and be motivated to participate in the improvement and protection of the entire aspect of the environment.
- EAE provides the skills that will help adults to identify environmental problems and be able to move to bring about the solution to the various environmental problems.
- Through EAE, adults will be provided with opportunities to be actively involved at all levels in working towards the resolution of environmental problems.

If adults and youths are exposed to the attendant factors of air pollution among many other things, they will learn to safeguard their lives and the other components of the environment.

AIR POLLUTION

Every type of pollution is dangerous to both living and non-living components of the ecosystem. Interestingly this paper would want to dwell on air pollution (a situation where a thick layer of fumes hovers around the city due to urbanization, industrialization and poverty as the case may be. Air pollution is the “addition of harmful substances to the atmosphere resulting in damages to the environment, human health, and quality of life” (Encarta Dictionary). Air pollution can occur in homes, schools, offices. It occurs in cities across continent and even globally; this is why when pollution occurs, it does not affect only the individuals who pollute the environment but affects all and sundry.

So it takes only those whose consciences have been seared with hot iron (1st Tim. 4:2) to feel comfortable in harming the environment where they belong. Air pollution makes people sick, causes breathing problems and promotes cancer. It harms plants, animals and the ecosystem in which people dwell. Some air pollutants return to earth as acid rain and snow which are evidenced nowadays.

Air pollution contaminates the pure air in the atmosphere and makes living very uncomfortable and dangerous for all. This is because a lot of unwanted substances saturate in the air and when taken in, causes heart dysfunctional diseases like cancer of the lung, bronchial heart arrest and many more.

According to Encarta Dictionary, pollution is seen as “the act of polluting something especially the natural environment”. Dhameja (2007) defines pollution as “any change in the environment which contributes to its deterioration. This change could be in the physical, chemical, or biological characteristics of our physical environment (air, water and land)”. He also stated that this pollution is undesirable and harmful to human life, other organisms and cultural assets and that the resultant impact of pollution could have far-reaching consequences to the level that the very essence of life is threatened.

Pollutant is any substance present in the environment in harmful concentration which adversely alters the environment by damaging the growth rate of species and by interfering with the food chains is toxic and affects the health, comfort and property etc. (Dhameja, 2007). Pollution as defined above can never be friendly to human life and also to every component of the environment. Therefore, whoever pollutes the environment is doing to him/herself some harm, no matter the reason(s) for the action(s) (Lapinski, Schoch & Tweed, 2003). There are different types of pollution. They are:

- **Air Pollution:** This is the addition of harmful substances to the atmosphere resulting in damage to the environment, human health, and quality of life.
- **Noise Pollution:** This is the irritating noise from the environment. It is the irritating, distracting or physically dangerous noise to which people are exposed in their environment which can be control.
- **Water Pollution:** This is contamination of stream, lakes, underground water, bays or ocean, by substances harmful to living things:
- **Thermal Pollution:** This is the discharge of heated liquid into water. The discharge of water or other liquid that is hot enough to harm wildlife into natural body of water.

SOURCES OF AIR POLLUTION

Air Pollution stems from different means like gas or particulates. Particulates are “Tiny solids suspended in the atmosphere such as dust, ash, and soot from burning organic matter, liquid droplets in smoke or smog, and traces of metals such as lead, iron, and copper are also particulates. Particulates are dangerous to people because they are tiny in size. The tiny particles are easily inhaled with air and become trapped in the lungs. Gaseous pollutants come from group of chemicals called Oxides (compounds of oxygen and another element), common examples are compounds of oxygen and carbon, sulfur, or nitrogen. These compounds are released when fossil fuels and organic matters are burned, especially in automobiles and coal-burning plants. Other pollutants are Ozone (O₃), (a very corrosive photochemical smog which is very poisonous to plants and animals, nitrogen dioxide (NO₂), hydrocarbons, methane and chlorofluorocarbons (compound of carbon, chlorine, and fluorine CFCs) (Lapinski, Schoch, & Tweed, 2003). The following sources could equally be considered:

- Motor Vehicles exhaust through some industrial processes

- Heat and power generation facilities that use oil or coal containing sulfur and sulfuric plants
- Refuse incineration
- Explosives
- Fertilizer plants
- Slash and Burn agricultural practices
- Burning of Contraband goods
- Burning of Petrol Tanker (burning of fossil fuel (Enger & Smith, 2006)
- Burning of Illegal Bunkers' equipments and camps etc.

EFFECTS OF AIR POLLUTION ON THE ENVIRONMENT

Pollution affects both living as well as the non-living components of the environment. It causes drastic changes in the physical environment which causes community-wide problems as it pollutes the air, water and land. Among other things it also affects the health of humans and animals and damages plants and property. As environmental stress from pollution increases, a lot of problems have been experienced such as food poisoning, infectious disorder on plants as it causes reduction in growth rate and death of plant e.g. necrosis (dead areas on a leaf structure), chlorosis (loss or reduction of chlorophyll leading to yellow colour of leaf), epinasty (downward curvature of the leaf due to high rate of growth on the upper surface) and abscission of leaves (premature fall of leaf) (Dhemeja, 2007). Also air pollution does a lot of harm to the entire ecosystem some of which are:

- It corrodes statues and buildings
- It damages crops and forests
- It makes lakes and streams unsuitable for fish, other plants and animal life
- It lets in more radiation from the sun
- It prevents heat from escaping back into the atmosphere
- It leads to a rise in global average temperature (global warming) (Shrivastava, 2006)
- It affects world food supply
- It alters sea level
- It makes weather more extreme
- It increases the spread of diseases etc. (Microsoft (R) Encarta (R) 2009 (DVD). Redmond, WA: Microsoft Coordination, 2008).
- It causes lung diseases like heart attacks, asthma, bronchitis, lung cancer, immune suppression, and abnormal fetal development among other health problems (Cunningham & Cunningham, 2008).

If all these are the resultant effects of man's reckless activities with environment, it should be expected that man learns to "sit up" and "shines his eyes" to see what is happening to the environment where he belongs.

AIR POLLUTION CONTROL

There are several processes that help to control or reduce air pollution such as natural processes, government, and industries. Rain may remove pollutants from the atmosphere; pollutant like carbon dioxide can naturally be removed from the air by plants and some microorganisms for the use of sugar and shells and if buried can change to fossil fuels. In the same way, automobiles which use gasoline as fuel could be stopped and replaced with electric cars which do not produce emissions (Lapinski, Schoch & Tweed, 2003). Though many will kick against the use of pollution control in industries with the claim that it is quite expensive, that the cost will cause industries to fail and so reduce the number of workers and bring about unemployment; we need to weigh the cost and the harm that the pollutants cause to lives and property if air pollution control is discouraged.

For the custom officers, soldiers, Civil Defence Corps and governmental bodies who whether by ignorance or out of sheer wickedness pollute the environment, they should be called to order. It is possible that somebody would want to say, “We walk by directives from our superior”; you may equally let your superior share from the knowledge you just acquired about the environment so that your superior also may become aware of the harm he/she has been doing to him/herself and thereby think of the alternative means of disposing the contraband goods; such as burying frozen foods in the soil to boost the soil nutrients, selling the empty tankers for a recycling purpose and instead of causing pollution with the bunker’s equipments and camps, they should be trained to operate local refinery legally to avoid littering the environment with the residues from the fossil fuels.

VALUE RE-ORIENTATION

Value re-orientation means a situation where an individual places value or importance on a particular thing that he would want to safe-guard or protect and in the same vein would also want to accept a change of attitude for a better method or technique of doing it. A situation where an individual does not place value on a thing, such an individual is not obligated to place any regard to it; he could willingly allow it to be wasted. It is in this manner that Nigerian citizens and the government itself could deal mercilessly and unfriendly with the environment not minding what their actions do to the environment and themselves who cause the environmental crises.

It may take someone’s interest to ask, how much of the environment do the adults and youths’ population in the real sense know; in order to receive the blame? How much of the usefulness of the environment do they know, or are they even aware of the repercautionary effect of their actions to their own very lives? In a situation where an individual is accustomed to a particular way of life or a style of doing a thing which has become detrimental to his life and existence, such a person needs to have a rethink and seek to have an understanding about:

- What he/she has been doing;
- The repercautionary effect of his/her actions; and
- See reasons to why he/she should be introduced to a more harmless way of doing such things.

It is on this premise that it becomes necessary that the knowledge of environmental adult education (which is a veritable tool for educating the individuals whose actions affect the environment negatively) be employed for a successful protection of the environment and the

entire ecosystem. This is because EAE has a very vast area and techniques of affecting the lives of the individuals as it concerns their ability to sustainably deal with the environment such as:

- Creating awareness of the environment in the individuals;
- Making the people responsible in their actions towards the environment;
- Controlling their actions on the issues of the environment;
- Being able to acquire alternative means of dealing with the environment for sustainability;
- Fighting for the right attitude towards the environment.

EAE AND POLLUTION CONTROL: A STEP TOWARDS VALUE RE-ORIENTATION

Having been exposed to the knowledge of environmental adult education which is seen as a process of developing in adults certain attitudes, skills and knowledge that could enable them to successfully interact and live in harmony with the external forces and elements that surround them as they engage in their daily activities for survival; the knowledge of air pollution as harmful substances released into the atmosphere; some of such substances that are harmful to both living and non-living things; sources of air pollution as from motor vehicles exhaust through some industrial processes; heat and power generation facilities that use oil or coal containing sulfur and sulfuric plants; refuse incineration; explosives; fertilizer plants; slash and burn agricultural practices.

Other sources are burning of Contraband goods; burning of Petrol Tanker; burning of Illegal Bunkers' equipments and camps etc.; the effect of air pollution such as lung diseases like heart attacks, asthma, bronchitis, lung cancer, immune suppression, and abnormal feta development among other health problems (Cunningham & Cunningham, 2008); food poisoning, infectious disorder on plants which causes reduction in growth rate and death of plant e.g. necrosis (dead areas on a leaf structure), chlorosis (loss or reduction of chlorophyll leading to yellowing of leaf), epinasty (downward curvature of the leaf due to high rate of growth on the upper surface) and abscission of leaves (premature fall of leaf) and many more (Dhemeja, 2007); it is believed that man would decide not to be unfriendly with the environment seeing that every activity he carries out is at the detriment of his life and the environment which he needs to sustainably protect so that his generations yet unborn will benefit from it.

Seeing religiously that EAE is such education that exposes both youths and adults to the knowledge of what the environment is; why they need the environment, what harm they have been doing to the environment, how they should interact with the environment, what they need to do to remedy the harm created and how to live to be friendly with and sustain the environment for posterity. It is clear that with this knowledge, man would therefore know that he needs the environment to survive and to also live comfortably. This is to agree that EAE will make the individuals to place positive value on the environment and bring about change in their attitude towards their dealings with the environment.

CONCLUSION

The knowledge of EAE, the importance of EAE to the populace, the knowledge of air pollution, its effect on the environment as it affects living and nonliving components of the ecosystem and the way forward, will enable the individuals in the society to take decision of having a second

thought on the way they interact with the environment. This understanding if accepted will go a long way to curb the unfriendly attitude that man exhibit on the environment thereby saving lives and the entire ecosystem from the hazard that air pollution has brought on the environment.

Recommendation

To curb the unwholesome and unfriendly acts of the adults and youths against the environment, the following recommendations are proffered: government officials, industrial bodies, the military, para-militaries, and many other groups that are involved in causing air pollution, should be involved in EAE in order that they are exposed to environmental issues and problems. This involvement will enable them develop love for the environment and become environmentally literate. With this, they could move to the level of fighting for the environment (Operational level of environmental literacy).

REFERENCES

- Cunningham, W. P., & Cunningham, M. A. (2008). *Environmental science: A global concern*. New York: Mc Graw-Hill.
- Dhameja, D. K. (2007). *Environmental study*. Delhi: S. K. Kataria & Sons.
- Eheazu, B. A. (2009). Unpublished lecture notes. University of Port Harcourt.
- Enger, E. D., & Smith, B. F. (2006). *Environmental science: A study of interrelationships*. New York; Mc Graw Hill.
- Hart John, "Air pollution" Microsoft (R) encarta microsoft(R) 2009 (DVD). Redmond, WA:Microsoft Corporation, 2008.
- Kimario, L. A. (2011). *Integrating environmental education in primary school education in Tanzania: Teachers' perception and teaching practices*. Abo Akademi University Press.
- Lapinski, A. H., Schoch, R. M., & Tweed, A. (2003). *Environmental science*: United States of America, Addison Wesley Longman.
- Shrivastava, K. K. (2006). *Environmental education: Principles, concepts and management*. New Delhi: Kanishka Publishers.
- Summer, (2003). *Environmental adult education*. Accessed from Wikipedia, the Freencyclopedia http://en.wikipedia.org/wiki/Environmental_adult_education on 12/08/2012.
- Wikipedia (2012) *Environmental adult education*. Retrieved from http://en.wikipedia.org/wiki/Environmental_adult_education