ENVIRONMENTAL EDUCATION: A SINE-QUA-NON FOR BUILDING A SUSTAINABLE FUTURE THROUGH GENERAL STUDIES IN TERTIARY INSTITUTIONS

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Abstract

An education that is devoid of knowledge which spurs and stimulates character capital for sustainable globe is bridged. General studies (GS) in tertiary education stands in, as should equip and prepare students with general principles of culture, philosophy and science so as to be well rounded to sustainably function in the society on graduation. Study probes knowledge base of randomly selected students of tertiary institutions in South East Nigeria on key environmental aspects and concerns. Several related literature showed limited quantitative works that highlighted strategies and necessary Environmental Education (EE) components to meet sustainable development goals. Study fills the gap. Inferential and descriptive statistics incorporated after reviews and other print media assessments. Results indicate a poor understanding of global, as well as local environmental challenges, so need to dedicate a course on EE which could spur environmental literacy. Estimation indicate potential 13500000 environmental literates in 2030 from 500000 in 2017 with dedicated EE GS course. The study will educate policy makers on equipping GS to reflect prevailing realities and gear up inculcating sustainable approaches in attitudinal consciousness of students. Consequently, as future policy makers, a safer globe of higher potential will be achieved.

Key words: Environmental education, Sustainable development, General Studies

Introduction

Environment denotes a broad and comprehensive term referring to all that surrounds human: air, water, soil and light. It is a condition or circumstance that affects living beings. Environment could be said to consist of all external factors and forces with which one interacts from conception until demise. It includes the physical, chemical, biological, psychological and socio-cultural dimensions and in fact everything that makes up the context in which the individual lives (Oduro-Mensah, 1992, Mbalisi and Ugwu, 2012). Learning about them and their interrelationship could be termed environmental education (EE). Environmental education (EE) gets more essential in necessity as potential dangerous trajectory of the globe based on mans' activities become more evident. Intergovernmental Panel on Climate Change (IPCC) predicts over 90% certainty of human induced climate change (IPCC, 2007). Furthermore that business as usual (BAU) anthropogenic attitudes and activities could raise global temperature by 2˚C and could adversely alter further biodiversity resources and health balance. The implications are verse ranging from sea surge and flooding, melting of ice caps with potential endangering or extinction of biological resources, drought in some regions, increased poverty and conflicts, diseases and deaths. Meanwhile these could be happening faster than predicted with varying issues associated with climate change. According to Okere (2013) in 2010; ice measuring 250km^2 broke off Petermann's glacier and iceberg twice the size of Manhattan, about 120km^2 broke off same source as observed by National Aeronautics and Space Administration (NASA)

satellite on July 16-17 2012 and according to CNN.com, NASA has associated these to climate change. In Nigeria, worst flood in decades due to swollen rivers killed about 150 persons, made almost 140,000 people homeless, destroying farmlands and displaced dangerous animals like crocodiles and hippopotamus into people's homes (BBC, 2012; CNN, 2012). Drought in East Africa and the Sahel region of West Africa affecting about 13 million people (BBC, 2012), typhoon Bhopa that killed over 500 people in Philippines and in July, 2012 worst drought in USA in 60 years to mention a few are a piece of the ice berg in series of different scenarios of climate change not to talk about the recent flooding in Malaysia that left thousands of people homeless. Bosah (2013) documents about Millennium Ecosystem Assessment (2005) pointing to a factor of 400-800% increase in waste water loading within the next four decades over most of Africa. Again in few decade about 35% of mangroves lost or converted and 20% degraded. Furthermore her study documented that FAO (2010) estimates that 85% of marine fisheries in 2008 were either fully exploited, over exploited or depleted. In addition, the unabated land and marine based pollution of our oceans and seas has prompted changes to their chemistry, temperature and current which led to ocean acidification, biochemistry loss, widespread habitat destruction, proliferation of invasive species and simplification of ecosystems. Ignorance of key ecological reality of life continue to escalate environmental issues. Annual climate related caused economic deficit according to Dara Group as reported by Zokaei (2013) is $1.2tn- more than 1.5% of global GDP, with figure projected to hit almost $ 2.5tn by 2030. IPCC has predicted worst earth warming in history (Omer, 2008). This portends unclear future for coming generations especially in developing nations like Nigeria. However it is recommended that all hand on deck could scale back the potential environmental thalidomide. Stokking et al. (1999) evaluating environmental education for International Union for Conservation of Nature and Natural Resources (ICUN) state that environmental education is a must as conservation of nature in all its biological diversity is a priority. Also that conservation, equitable and sustainable use of nature are a basis for sustainable development. Presently an aspect of EE make up the History and Philosophy of Science curriculum in the General Studies (GS) in higher institutions in Nigeria. General Studies came into existence in Nigeria with the announcement on October 22, 1977 by the federal military Government directing all universities to set up General Studies units, introduce and make general studies courses compulsory. According to University of Maiduguri (n.d) it was backed by promulgation of an enabling decree same year in alignment with National Universities Commission (NUC) recommendation. Emanation of GS was after assessment of university academic programmes and what it takes in the production of better skilled graduates, who will be sufficiently empowered to meet the changing needs of the nation, global competitiveness, as well as the challenges of the labour market (University of Maiduguri, n.d). Consequently GS courses should be designed to focus on cultural diversity, education, moral instruction and environmental problems. This is to achieve main goal of producing graduates that are well rounded morally and academically sound, endowed with proactive and entrepreneurial ideas in a sustainable and socially unified society. The study delves into gaps from literatures that exhibited limited quantitative data that elucidate strategic environmental education to enhance Sustainable Development. Cashing in on all undergraduates who essentially are potential policy makers is imperative, as fine tuning and shaping their basic home environmental, civic and health attitude learnt in primary and secondary schools via Health Education, Social Studies, Home Economics and Integrated Science could be galvanized and projected on coming into the higher institution through an environmental dedicated GS course. This will help further shape the future policy makers as they become more aware of

environmental issues, corresponding multifaceted consequences and proactive antidote measures. Clark et al (2013) sited in Ademola et al. (2014) notes that the number of students at the tertiary level has grown from under 15,000 in 1970 to approximately 1.2 million today. Moreover there are over 430 higher institutions in Nigeria with intake rate of 500,000 per annum (Adesulu, 2014). Hence it may form a rock base to revolutionalize environmental attitude and actions, thereby forming well rounded graduates and hence contribute immensely to the global quest for the '"future we want"' . Well rounded graduates would have their arsenal not just their area of study but also their attitudinal and activated conquest to contribute in solving most challenging issue facing mankind. The study continues with a brief review of relevant literature; highlight of methodical approach; elucidation of results and corresponding discussion.

Literature Review

Environmental Education (EE)

Salvano Briceno & David C. Pitt (1988) assert education as always been part of the process by which people become fitted to live successfully in their world. It deals with development of an individual's ability to think, reason, and create. One of its fundamental needs is how students of all ages gain knowledge of and what they can learn. Therefore education (formal and informal) are essential aspects for a sustainable human existence including boosting of environmental challenges handling potential. It is a common knowledge that environmental externalities associated with human activities such as climate change including depletion of globes scarce resources especially with population increase blossomed. Thus created a comparative unison in acceptance of an impending environmental thalidomide if business as usual (BAU) hang on. UN (1992) emphasizes of compulsory incorporation of EE is a necessity in streamlining the populace attitude towards achieving sustainable development. Consequently environmental education discourse at national, regional and international stage propelled due to growth of environmental challenges consciousness. Bartosh (2003) reported varying authors assertion of the genesis of environmental education- Disinger (1983) stated 1948 via International Union for the Conservation of Nature and Natural Resources; Cooper (1992) and Gough (1997) who opined environmental education limelight in late 1960s.Lotz, (1999) and McMillan et al. (2004) state a rise in environmental awareness from the 1970s due to increased environmental education. Clark et al (2013) and Shofoluwe and Sam (2012) documents the world's first Intergovernmental Conference EE held in Tbilisi, Georgia in 1977 adopting a declaration that advocated environmental education as a necessity for sustainable future and challenged that it should be inculcated to create awareness and values amongst humankind in order to improve the qualities of life and the environment. So EE generated talking points. Several literature has conceptually clarified environmental education. Stapp et al (1969, p. 30) defines EE as a process championed to turn out a populace with enhanced understanding of the biophysical environment and corresponding issues, knowledgeable as well as stimulated towards issues resolution strategies. In his submission, Palmer (1998) holds EE as procedure of identifying principles and clearly elucidating concepts so as to develop essential skills and attitude to comprehend and value the link between man, way of life and biophysical surroundings. While according to UNEP (2012) EE involves the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his bio physical surrounding. Moreover UNESCO (1978) in the Tbilisi Declaration described EE as "a learning process that increases people's knowledge and awareness about the environment and associated challenges,

develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations and commitments to make informed decisions and take responsible action". Consequently the articulation of the following EE objectives:

• Awareness– to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems. • Knowledge– to help social groups and individuals gain a variety of experience in, and acquire a basic understanding of, the environment and its associated problems. • Attitudes– to help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection. • Skills– to help social groups and individuals acquire the skills for identifying and solving environmental problems. • Participation– to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems (UNESCO, 1978). Assessments of conceptual clarifications indicate the most widely accepted notion among scholars in the field of EE is that the ultimate goal of EE is to influence behavior and to develop active citizenship (Hines et al. 1987; Simons, 1995; Breiting et al., 1999; Vaughan et al., 2003). Thus environmental education and training are central to raising intensive awareness on the long term adverse impact of environmental degradation and unchecked development (UNCED, 1992). Hence further support for EE as a sustainable tool for assured future as it lubricates consciousness that appreciates the linkage of environmental integrity, human well being and economic prosperity. However Environmental report in 2011 by North Carolina State according to Shofoluwe and Sam (2012) indicate poor understanding of the tripod necessity, leading to environmental degradation. EE should thus basic enhance man to acquire basic information about the environment, develop a positive mind-set and alliance with the environment with resultant scaling back or termination of potential impacts. UNESCO Tbilisi declaration on EE objectives embodies all. Bartosh (2003) accents it a widely accepted definition. Accordingly the objectives outcome applied in this study. But study interchangeably use awareness and knowledge, considers skills as part of knowledge. So extends consideration on attitude and participation. Premised on Boiyo (2014) consideration of awareness as knowledge and understanding of facts related to environment and consequences of various environmental issues. Moreover Oxford Advanced Learner's dictionary (International Students' 8th edition) defines knowledge as information, understanding and skills that one gain through education or experience- practical/ scientific knowledge of/about something.

Environmental Knowledge

Mehra and Burhan in Sobur (2003:35) asserts that “knowledge is a system of idea corresponding to the system of things and is related by belief”. Supriyono (2009:30) states that “the nature of knowledge contributes to deconstruct mechanical learning”. Knowledge as related to environmental problems and the right action to solve them become one of the requirements for responsible behavior. Environmental knowledge is human’s understanding towards the unity of space, things, power, condition, and organism, including human with its behavior which influence other’s survival and welfare. It could be acquired in dual way- from experience or via scientific information. Formal EE may involve the latter which follows a definitive and systematic procedure. According to Notoatmodjo (2002) knowledge in the cognitive domain has six actions: knowing, understanding, application, analysis, synthesis, and evaluation. Environmental knowledge is a product obtained from information and interaction process involving concept, method, facts, principle, social norm, law norm, religious norm, value system

and human's attitude, and natural phenomenon about environment covering the unity of space with living and non-living creatures and the conditions in it. Hines, Hungerford, and Tomera (1986) state that: "Behaviour is not shaped by itself. It is shaped by learning process. Therefore in learning, human must exhibit conscientious environmental alliance". Alliance that considers planet earth as belonging to all its occupants; natural resources exploration and utilization in harmony with nature and galvanizing for ethical and responsible environmental behaviour for future generation. Consequently important guide on elements for EE curriculum syllabus.

Environmental Attitude

According to Azwar (2003:6), attitude is a general evaluation created by human toward themselves, other people, object or issue. Notoatmodjo (2002) defines attitude as reaction or response towards stimulus or object. Purwanto (1999:62) states that attitude portends ideas or feelings with the tendency to act as that object's attitude. A general attitude can be defined as something which "must be perceived by the individual as connected in some meaningful way to a specific situation to serve as a basis for an evaluative reaction in that situation" (Prislin & Ouellette, 1996, p. 845). Ajzen (2001) reviewed the ability of attitudes to predict intentions and overt behavior; according to the theory of planned behavior, people act in accordance with their intentions, while intentions in turn are influenced by attitudes toward the behaviour. There are several studies concerning environmental attitude especially in primary and secondary (Shofoluwe, 2012; Robinson 2013 and Omofonmusan & Osa-Edoh, 2008; Leeming et al., 1993 and McMillan et al., 2004). Focus has been to sway younger age pupils to pro-environment behaviour. Schmidt (2007) study was to find how environmental issues knowledge influenced the attitude and behaviour of students and result showed a positive environment attitude afterwards, Environmental attitude is dynamic as it could either be positive or negative as regards support of an environmental object. Purwanto (1999) states: "attitude can be positive or negative. Positive attitude is an act of approaching, loving, and hoping for specific object. Negative attitude tend to avoid, hate, and dislike specific object." However EE advocacy is paramount as studies show those not participated in the environmental issues course (Schmidt (2007) had poor awareness with implied poor pro-environment behaviour.

Participation in Environmental Activities

According to Boiyo (2014) participation is described as practical dynamic actions towards environmental protection. He noted is the terminal phase in EE conceptual framework portraying informed community with capacity to make useful decisions and take action. Effectual participation course of action should be inspirational as well as flexible domed on varying approaches and techniques. Sarkar (2011) documents that original approach should be applied in participation techniques and approach. It should therefore encourage a creative and original approach in employing participation techniques. Hence equips and encourages people for better and sustainable participation especially in way of life decision making and in other developmental concepts. UNEP (2004) substantiates enhancement of quality environmental decision due to participation perhaps influenced broad information inputs. But the process determines the integrity of decisions from stakeholders participation. The process needs to have clear objectives from the outset, and should not overlook the need for very professional facilitation. However there exist challenge of identifying aspects that influence people participation in environmental activities. Some studies have suggested that to have a solid grasps of the multifaceted and dynamic natural systems and methods, amalgamation of local and

scientific knowledge are essential. Goulding (1990) holds that for effective participation, information, education, organization features including shared perspective among individuals and organization are essential. Some scholars have argued importance of philosophical base for participation with highlight including learning, equity, trust and empowerment. Environmental philosophy resonates. A branch of philosophy which imbibes the natural environment and human place within it, inquiring about nature, its value and how we ought to counter environmental challenge like environmental deterioration, pollution and climate change. It unlocks the knowledge of link between natural and human technology and development. Hence pinning mankind place in the natural world. Elements of environmental philosophy as posited by Christopher (2001) include environmental ethics, ecofeminism, environmental hermeneutics and environmental theology. Agenda 21 of the United Nations Conference on Environment and Development emphasizes the importance of EE and encourages participation of all especially starting early with children as they form about 50% of world population and most vulnerable as regards environmental issues (United Nations, 1994). Amirad et al (2011) studied the impact of age and level of education on environmental awareness and attitude. Study showed a positive trend with inculcation of EE as age and level of education inclined. So EE commonly identified a win-win situation. According to C.P.R Environmental Education Centre (CPREEC) of India's Ministry of Environment and Forest (MoEF), EE is made compulsory at all levels of formal education based on a Supreme court ruling of 2003. Some countries with EE as standalone and compulsory are enumerated in table 1. Some other countries that have followed similar trend are as showcased in table 1.

Table 1: Selected European Countries/Cities that integrated EE in curriculum and nomenclature of EE

Countries/Cities	**EE Nomenclature**
Belgium, Flemish Community	Environmental Studies
Principles of Environmental Sciences	Greece
Portugal	Environmental and Consumer Education
Spain	Earth and Environmental Sciences
Sweden	Environmental Science and Environmental Politics
UK, England, Wales & Northern Ireland	Environmental Science
Scotland	Managing Environmental Resources

Source: Stokes et al. (2001)

Content of EE syllabus which inculcates all necessary indices for sustainable future may be a challenge; however National Council of Educational Research and Training (NCERT), India proposes the following as essential component of EE syllabus:
• Natural resources (flora, fauna, air, water, land, minerals) • Biological diversity • Marine life • Inter-dependence of man and environment • Environmental degradation • Environmental problems and hazards • Environmental pollution _ air, water, soil, noise • Waste management • Disaster management • Protection of human health conditions and quality of life • Conservation

of energy, soil, wildlife, forests, water • Renewable resources • Eco-friendly and indigenous technologies • Water resources management • Sustainable development • Sustainable agriculture • Environmentally sound management of biotechnology • Environmental policies and programmes • Environmental information resources • Acts, laws and regulations • Role of government and non-governmental agencies.

Methodology

Study Area

The survey was conducted among tertiary students in 8 private and government owned universities in Eastern Nigeria namely: Federal University of Technology (FUTO) Owerri; Hezekiah University (UNIHEZ), Umudi, Imo State; Imo School of Health Technology; Abia Polytechnic; Anambra State University, Igboariam; University of Nigeria (UNN); Enugu State University of Science and Technology and Gregory University, Okigwe.

Method of Data Collection

For this research, the quantitative method of data collection was used in which the survey method as an instrument of data collection was used through the administration of questionnaires. This is because under the quantitative design, the most appropriate instrument for data collection is questionnaire (Marshell, 2011). Questionnaire was designed based on varying aspects of environmental issues and information that could inform level of awareness and willingness for sustainable interaction with the environment. This is premised on the micro level assess to EE based on few EE topics embedded in the History and Philosophy of Science in Nigerian tertiary institutions.

Sample Size

Sampling method is applied. Obasi (2000) and UNESCO (2005) assert that sampling in educational research is generally conducted in order to permit the in depth study of part, rather than the entire, of a population to generalize and make conclusion about the entire population. Sample size is consequential in result integrity thus study sample size determined using statistical sampling method adopted from Israel (1992):

$$n_o = \frac{Z^2pq}{e^2}$$

Where n_o = sample size
Z= 95% (desired confidence level)
p= .5 (maximum variability)
q=1-p
e = desired level of precision (± 5%)

Consequentely an overall sample size of about 384 was determined. Moreover sample size of 383-398 is adequate for population size of about 9,000-100,000 for precision level of ±5% and confidence level 95% and p=.5 (Israel,1992). Study assumes total population in entire schools under study less than 100,000. Administering the 384 questionnaires, stratified random technique is used, in which students were sampled at random around the campus so as to guarantee equitable representation of the total population under study (UNESCO,2005).

Data Analysis

For data analysis, study adopted the quantitative method of data analysis in which the questions were analyzed with help of Statistical Package for Social Scientists (SPSS). Of the 384 questionnaires distributed, only 300 questionnaires were collected and analyzed thus forming the limitation of the study.

Data Estimation

Data estimation is important as not all data are available. Several methods for data estimation exist but polynomial curve fitting is widely used. The technique aims to express the linkage between a variable X as a function of available data C and a response Y that search for best fit in curve for the data. Polynomial of m order is as follows (Shekarchain et al., 2011)

$Y = C_0 + C_1X + C_2X^2 + ... + C_mX^m$ - Equation 1. So equation 1 employed to estimate impact of EE on population from 2017-2030.

Results and discussion

Results in this study highlights students awareness of selected environmental aspects and topical issues which could be formally learnt and which are elements of sustainability. Initial field survey of existing average status of EE in tertiary institutions are highlighted in table 2. It showcases a less than 50% of just two credit load general course out of an average of 16 credit load GS courses offered only in first year in Nigerian tertiary institutions.

Table 2: Average course outline of History and Philosophy of Science incorporating elements of EE in Nigeria tertiary institutions.

1	Man-his origin and nature.
2	Man and his cosmic environment.
3	Scientific methodology.
4	Science and technology in the society and service to man.
5	Renewable and non-renewable resources- man and his energy resources.
6	Environmental effect of chemical plastics, textiles, waste and other materials, chemicals and radiochemical hazards.
7	Introduction to the various areas of science and technology.
8	Elements of environmental studies.

Consequent upon table 2, so further probe on simple but essential and consequential impact on environmental integrity. Figure 1 shows just 15% understand the meaning of Sustainable Development.

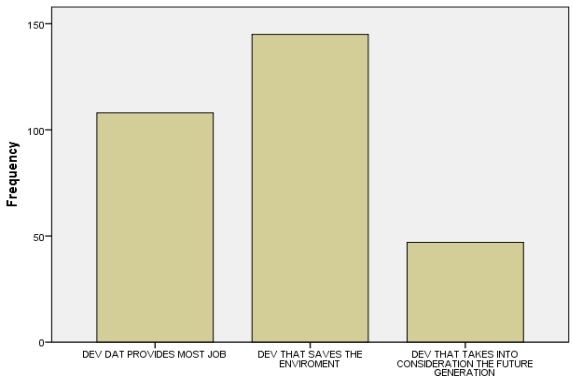

Figure 1: Knowledge of Sustainable Development

Table 3 indicate a similar trend on whether the globe is on a dangerous trajectory as 80% have no knowledge or not sure of the prevailing global environmental status as indicated by IPCC. So could be related to other results of their attitude including their method of waste disposal- 90% either burnt, buried and openly dumped their waste and also their knowledge and application of 3 Rs (Reduce, Reuse and Recycle). About 65% students did not know as well as practice it as indicated in figure 3. Furthermore knowledge of environmental policy according to table 4 followed similar trend.

Table 3: Global environment on dangerous trajectory

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	YES	60	19.8	20.0	20.0
	NO	104	34.3	34.7	54.7
	NOT SURE	136	44.9	45.3	100.0
	Total	300	99.0	100.0	
Missing	System	3	1.0		
Total		303	100.0		

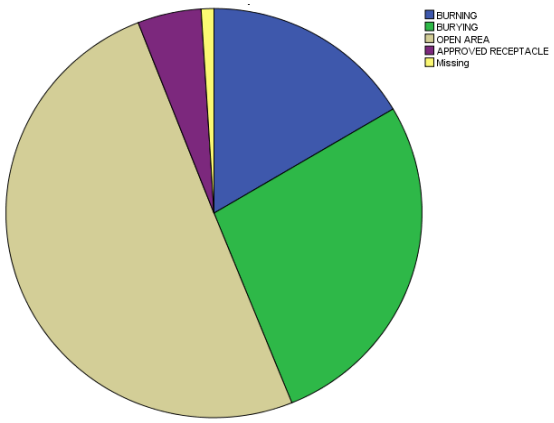

Figure 2: Method of waste disposal

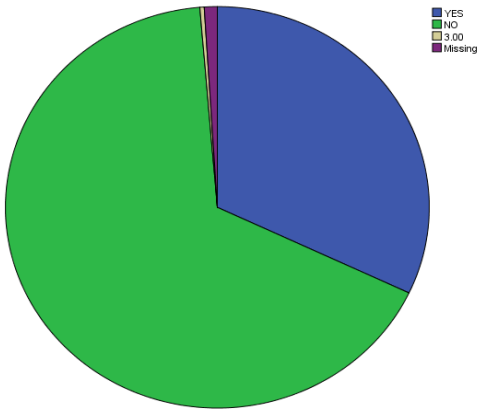

Figure 3: Practice of 3 Rs

Table 4: Knowledge of Environmental policy

Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**

Valid	YES	68	22.4	22.7	22.7
	NO	139	45.9	46.3	69.0
	NOT SURE	93	30.7	31.0	100.0
	Total	300	99.0	100.0	
Missing	System	3	1.0		
Total		303	100.0		

Yet as table 5 and 6 point, many agree unhealthy environment and knowledge of global warming. This could be due to indiscriminately dumped refuse seen many places and from media information respectively. Assessment of all results indicate a disconnect between the students, formal knowledge and necessary attitude actions against environmental degradation. So not surprising over 85% of students support need for standalone environmental education as shown in table 7 which is in tandem with Bosah (2013) study which got over 90% support . Robinson (2013) attest scattered elements of EE in non-compulsory environmental elements which short changes many undergraduates and underscores their minimal exposure and environmental awareness and responsibility. Accordingly, environmental education and training are vital to raising thorough awareness on the long term adverse impact of environmental degradation and unchecked development (Robinson, 2013 and UNCED, 1992). There is need for integration of knowledge of the interconnectedness of man and his environment including human with its behaviour which may impact other's survival and welfare (Hines, Hungerford and Tomera,1986). As Bosah, (2013) affirm our environment's inseparability from life. Therefore, every need for the proper management of our world. Necessity then to incorporate all necessary elements of environmental topics including field approaches that prepares the students on hands-on are essential. Estimation of a student influencing 2 people based on access to EE could enhance environmental consciousness about 26 folds by 2030. Trend is indicated in figure 4.

Table 5: Do we have a healthy environment

		Frequency	**Percentage**	**Valid Percent**	**Cumulative Percent**
Valid	YES	50	16.5	16.7	16.7
	NO	124	40.9	41.3	58.0
	NOT SURE	126	41.6	42.0	100.0
	Total	300	99.0	100.0	
Missing	System	3	1.0		
Total		303	100.0		

Table 6: Knowledge about global warming

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	YES	185	61.1	61.7	61.7
	NO	83	27.4	27.7	89.3
	NOT SURE	32	10.6	10.7	100.0
	Total	300	99.0	100.0	
Missing	System	3	1.0		
Total		303	100.0		

Table 7: Need for environmental education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	260	85.8	86.7	86.7
	NO	40	13.2	13.3	100.0
	Total	300	99.0	100.0	
Missing	System	3	1.0		
Total		303	100.0		

For the practical approach, establishment of environmental clubs could be beneficial as could be a tool for field practices on ways to scale back environmental damage. Boiyo (2014) study on ways of engaging students found majority of students motivated by club activities and proposed it as an essential and powerful tool for achieving both curricular and co-curricular aims in schools. Moreover Abba and Singh (2014) supports Boiyo (2014) position and further highlight importance of environmental debates and seminars as potential stimulants of students' interest in full participation and responsibility towards environmental protection and improvement.

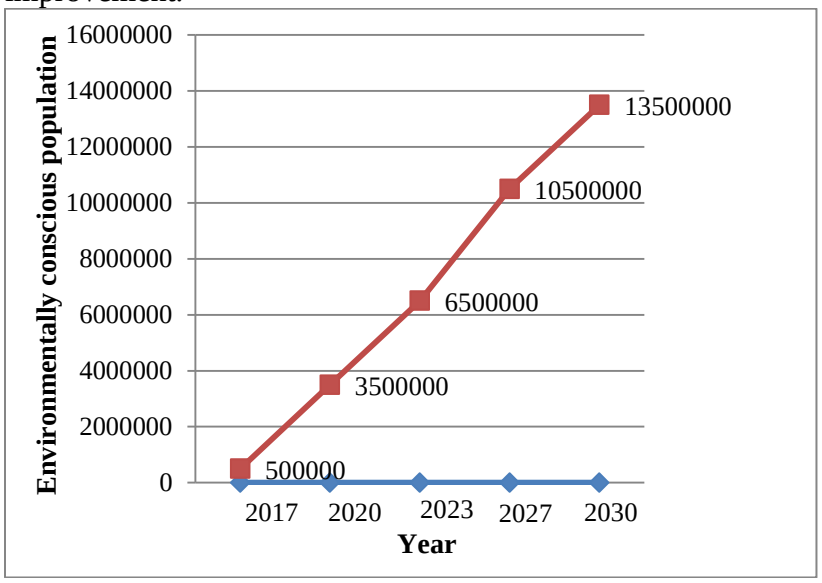

Figure 4 : Estimated impact of EE on population through GS.

Conclusion and Recommendation

The components of EE incorporated in the GS syllabus is insufficient . Moreover evidence from study show limited understanding of environmental issues and invariably paucity of skill to tackle them. Environmental Education (EE) is a lifelong process with the objective of imparting to its target groups in the formal education sectors environmental awareness, ecological knowledge, attitudes, values, commitments for actions, and ethical responsibilities for the rational use of resources and for sound and sustainable development (UNESCO, 2012). Therefore NCERT proposed component of EE syllabus should be adopted in GS as it incorporates key environmental components. It should be enhanced with field studies, seminars and environmental challenge competitions which will help to give in depth knowledge; hand-on skills and responsible participation for tackling environmental challenges.

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