

**STUDENTS' SOCIOCULTURAL VARIABLES AND
ENVIRONMENTAL LITERACY IN SOCIAL STUDIES AMONG
JUNIOR SECONDARY SCHOOL STUDENTS IN IBADAN
METROPOLIS, NIGERIA**

BY

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ABSTRACT

One of the objectives of teaching and learning of social studies is the inculcation of environmental literacy (environmental knowledge, desirable attitude and practices). However, reports have shown that Junior Secondary Students in Ibadan are deficient in environmental literacy as evident in their low environmental knowledge, poor attitude and practices. Previous studies focused largely on intervention programmes geared towards improving environmental literacy. This study, therefore, was carried out to investigate students' sociocultural variables (cultural practices, religious beliefs, home location, gender role and Participation in Environmental Conservation Club Activities - PECCA) as predictors of environmental literacy in social studies among junior secondary school students in Ibadan metropolis, Nigeria.

Vygotsky's Sociocultural Theory provided the framework, while the survey design was adopted. The five Local Government Areas (LGAs) in Ibadan metropolis were enumerated. Thirty Junior Secondary Schools with Functional Environmental Conservation Clubs (FECCs) were purposively selected across these LGAs. Fifty Junior Secondary II students who were members of the club were randomly selected from 14 schools, while in other schools where members were less than 50, all were enumerated. In all 1,137 students participated in the study. Instruments used were Cultural Practices ($r=0.77$), Religious Beliefs ($r=0.78$), Gender Role ($r=0.78$), Environmental Attitude ($r=0.77$) and Environmental Practices ($r=0.78$) questionnaires, PECCA Observation Scale ($r=0.79$) and Environmental Knowledge Test ($r=0.75$). Data were analysed using descriptive statistics, Pearson product moment correlation and Multiple regression at 0.05 level of significance.

Respondents' age was 13 ± 1.62 years. Cultural practices ($r=0.08$), religious beliefs ($r=0.14$), home location ($r=0.39$) and PECCA ($r=0.12$) had significant positive relationships with students' knowledge, while gender role did not. Cultural practices ($r=0.08$), religious beliefs ($r=0.20$), home location ($r=0.14$) and gender role ($r=0.12$) had significant positive relationships with attitude, but PECCA did not. Cultural practices ($r=0.08$), religious beliefs ($r=0.09$), home location ($r=0.08$) and PECCA had significant positive relationships with practices, but gender role did not. The composite contributions of the independent variables were significant on knowledge ($F_{(5,1131)}=44.25$; $\text{adj. } R^2=0.16$), attitude ($F_{(5,1131)}=14.99$; $\text{adj. } R^2=0.06$) and practices ($F_{(5,1131)}=4.39$; $\text{adj. } R^2=0.02$) accounting for 16.0%, 5.8% and 1.5% of their total variances, respectively. Home location ($\beta=0.40$) and religious beliefs ($\beta=0.12$) contributed to knowledge, but PECCA, gender role and cultural practices did not. Religious beliefs ($\beta=0.17$), home location ($\beta=0.13$) and gender role ($\beta=0.08$) contributed to attitude, but cultural practices and PECCA did not. Religious beliefs ($\beta=0.07$) and PECCA ($\beta=0.06$) contributed to practices, but cultural practices, home location and gender role did not.

Students' home location and religious beliefs influenced environmental knowledge; students' religious beliefs, home location and gender role influenced environmental attitude, while students' religious beliefs and participation in environmental conservation club activities promoted environmental practices. Therefore, these variables should be considered in improving junior secondary students' environmental literacy in social studies in Ibadan Metropolis, Nigeria.

Keywords: Environmental literacy, Religious beliefs, Home location, Environmental conservation club

Word count: 452

CERTIFICATION

I certify that this research work was carried out by **Elizabeth Ikeola WAHAB** in the Department of Arts and Social Sciences Education, Faculty of Education, University of Ibadan, Ibadan, Nigeria under my supervision.

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DEDICATION

This research work is dedicated to Almighty GOD - the Ancient of days, Rose of Sharon and I AM that I AM for giving me the gifts of life and wisdom to accomplish this work.

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LIST OF ABBREVIATIONS IN THE STUDY

WHO	World Health Organisation
WDR	World Development Report
UNEP	United Nations Environmental Programme
FEPA	Federal Environmental Protection Agency
FAO	Food and Agriculture Organisation
NPE	National Policy on Environment
EPI	Environmental Performance Index
LGAs	Local Government Areas
SIPs	Sustainable Ibadan Projects
WED	World Environment Day
OYOWMA	Oyo State Waste Management Authority
NCF	Nigerian Conservation Foundation
UNGA	United Nations General Assembly
SDGs	Sustainable Development Goals
CCS	Carbon Capture and Storage
ECC	Environmental Conservation Club
YES	Youth Environmental Scout
EHSA	Environmental Health Students' Association
ECCA	Environmental Conservation Club Activities
EE	Environmental Education
ZPD	Zone of Proximal Development
NEST	Nigerian Environmental Study Team
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UN	United Nations
UNCED	United Nations Conference on Environment and Development
WSSD	World Summit on Sustainable Development
UNCSD	United Nations Conference on Sustainable Development
MDGs	Millennium Development Goals
NRCC	National Resources Conservation Council
SEPA	State Environmental Protection Agency
NGA	Non Government Agencies

NESREA	National Environmental Standards and Regulations Enforcement Agency
NNPC	Nigerian National Petroleum Corporation.
EIR	Environmental Information Report
FMENV	Federal Ministry of Environmental
NIEHS	National Institute of Environmental Health Sciences
GRAs	Government Reserve Areas
NEW	Nigerian Environmental Watch
ECOSON	Ecological Society of Nigeria
FAN	Forestry Association of Nigeria
IITA	International Institute of Tropical Agriculture
WWF	World Wildlife Fund
TUCN	International Union for the Conservation of Nature
BI	Birdlife International
WI	Wetland International
FFI	Fauna and Flora International
WFN	Worldwide Fund for Nature
WCS	Wildlife Conservation Society
MOU	Memorandum of Understanding
NEP	New Ecological Paradigm
AFPM	American Fundamentalist and Pentecostalism Movements
SCPQ	Students' Cultural Practices Questionnaire
SRBQ	Students' Religious Beliefs Questionnaire
SGRQ	Students' Gender Role Questionnaire
SPECCAOB	Students' Participation in Environmental Conservation Club Activities Observation Scale
SEKT	Students' Environmental Knowledge Test
SEAQ	Students' Environmental Attitude Questionnaire
SEPQ	Students' Environmental Practices Questionnaire

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The quest for sustainable development in all aspects of human lives has led to a growing focus on the environment and other world community matters. Sustainability is achieved when environmental, social and economic issues are equally looked into in the bid to achieve societal progress and enhance standard of living. This is due to the fact that the cherished standard of living is not restricted to an improved economic standard of living alone but intrinsically interwoven with environmental and social sustainability. The quality of environment is germane in creating a genial and healthy environment for human wellbeing and fruitful life. Healthy environment is influenced by the behavioural patterns of people. All humans, like every other living organism, rely on the natural environment for survival, growth and development. But unlike the other organisms, it is human beings alone that take intentional step to rebuild the environment based on their interests and desires. Humans, thus, have the unique capacity of transforming the environment for better or worse.

The term environment is collectively defined as all the living and non-living things that constitute human's surroundings. These include the surface of the earth, hydrosphere, atmosphere, biosphere and other resources which are important to uphold life (Komolafe, 2011). The environment, according to Bisong (2012), comprises three components; physical, biological and social environments. As noted by Wallace (2006), the environment is not only the sum of all the material things that constantly interact with one another; it also includes the economic structures, the outlook and habit of peoples in different parts of the globe. The environment as a whole, therefore, includes all things (living and non-living), influences and conditions in human's vicinity which may be natural, socio-economic or cultural having impact on an organism's life and development.

Today, the world is experiencing many crises as it had never encountered before. The crises come in a variety of forms; socio-economic problem, ecological and environmental trauma, and nuclear devastation (Nwaigbo, 2003). Presently, people experience environmental trauma arising from overpopulation, reduction of natural resources, inadequate food, expansion of cities and metropolis, and pollution (Oladapo, 2012). These often result in environmental deterioration. The interrelationship and interplay between human beings and their environment has brought about the

imbalance within the ecosystem. The impact of environmental interactions on environmental resources precipitates ecological crises. Many people are worried not only on protecting the earth resources and the ecosystem which are in danger of extermination, but also with the dilemma of pollution of the natural environment and erosion threshold in the society (Faturoti, 2004). Pollution, a major global environmental concern, has wrecked a series of havoc on the environment and this has negatively affected the lives of many organisms, including human beings. World Health Organisation (WHO, 2017) reports that pollution contributes to 1.7 million child death each year. Health hazards which unsanitary and polluted environments have caused are numerous; they include diarrhea, malaria, respiratory disorders, decreased fertility, spontaneous abortion, and even death. There is now the general awareness that human's environment is under serious threats (Adegbulu, 2016; Sridhar, 2012; Ajiboye and Ajitoni, 2008). People in series of life claiming conditions lamented how little they appeared to themselves, and how big nature was when environment-related calamity occurred (Ogunade, 2007).

According to the World Development Report (WDR, 2012), yearly, more than two million deaths and billions of ill health such as malaria, cholera, guinea worm, typhoid and river blindness are credited to polluted water and unhygienic home conditions. Environmental problems occur in all countries and at every developmental phase, but they differ in nature, enormity and intricacy. The implications of human's brutality to the environment are serious throughout the world and specifically in developing countries. Environmental problems of less developed countries are mostly linked to poverty and illiteracy (Osibanjo, 2008). Whereas, speedy development is seen as the major cause of ecological trauma in advanced countries of the world (Babalola, Akinola and Okhale, 2010). The need to address the threat posed by environmental problems to the survival of the human race on planet earth has attained a great magnitude in the last two decades, such that it has become a priority on world political agenda (Ige, 1998).

Africa today suffers deforestation double the world rate. The deforestation rate is estimated at 3.7%, which is one of the highest in the world (United Nations Environmental Programme (UNEP), 2010). The increasing level of poverty and illiteracy in Africa is not indirectly connected to the present state of pollution and degradation of the environment in the continent. The poor and illiterates are mostly delighted in matters associated with their day-by-day continued existence than

the protection of the environment. Thus, the absence of environmental sensitivity mostly ends up to the display of unfavourable environmental practices aggravating environmental disaster and making people poorer (Babalola; Akinola, and Okhale, 2010).

Just like many other nations in the global community, Nigeria witnesses series of environmental problems such as drought, desertification, flooding and erosion, deforestation, industrial pollution, municipal wastes, trans boundary illegal traffic in barrel chemicals and hazardous wastes. In spite of the fact that the export of timber has been banned as far back as 1976, deforestation remains one of the top environmental challenges in Nigeria (Federal Environmental Protection Agency (FEPA), 1995). Between 2000 and 2009, the country lost 55.7% of its primary forests (FAO, 2010). Each region of the country faces environmental dilemma though at different levels. The north is bedevilled with wind storm while heavy rainfall leading to flood disaster affects the south. Over 2million tonnes of soil are lost yearly in south-central Nigeria, and this has caused a huge reduction in agricultural yield (WDR, 2015).

Nigeria has remained on the list of top five defecation countries in the world for the past 15years, moving from 5th place in 2003 to 2nd place in 2015 and setting to become number one in the year 2019 if the practice is not effectively checked (Obinna, 2019). Open defecation has been on the increase and there is no single Local Government Area (LGA) in Nigeria that is open-defecation free. According to the 2018 National Outcome Routine Mapping (NORM) report, 47million Nigerians defecate in the open while the country loses 455billion annually due to poor sanitation.

Environmental-health related challenges are in different forms based on the socio-economic status of each state together with the towns and villages within each state. These problems are connected to poverty, absence of portable and adequate water, poor housing conditions and poor environmental sanitation (Olaajo, 2016). With the growing of industries, the danger of respiratory illness and cancer-related deaths also arises. The high revolution in all industrial and many agricultural sectors have sharply increased the exposure of their workers and population at large to these health dangers.

As an urbanised country, Nigeria has its urbanisation rate to have increased from 48.2% in 2005 to 56% in 2015. The rate of the growth of this urbanisation has made it unavoidably difficult to have the best environmental standard (National Policy on Environment (NPE), 2016). Urban areas in Nigeria are more and more in danger of

water and air pollution. Five Nigerian cities have been included in the top ten polluted cities in Africa (Olawale, 2018). Improper disposal of solid waste is another aching problem in the cities while the less cities are beset with bush burning, deforestation and soil erosion (Omofonmwan and Osa-Edoh, 2008). The utility value of many urban areas is thus reduced together with its negative influence on home, economic performance and social welfare. This condition creates a main threat to the growth of the economy and developmental sustainability of the country.

Environments of most urban cities in Nigeria are increasingly degraded and are ranked among urban cities with the lowest livability index in the world (Daramola and Ibem, 2010). Nigeria recorded 54.76% and ranked 100 out of the 180 countries surveyed for the 2018 environmental performance index. The Environmental Performance Index (EPI) gives a world view of country by country environmental performance ranking and scores based on 24 indicators across ten issue categories covering environmental health and ecosystem vitality. These metrics provide a gauge at a national scale of how close countries are to established environmental policy goals (EPI, 2018). According to the Index (EPI), between 20 and 30 percent of the urban population enjoy decent urban life in the country. Despite the environmental efforts at eradicating environmental problems in Nigeria, the situational reports show that significant improvement has not been achieved. Responsible environmental behaviour has not fully become the way of life (culture) in third world countries particularly in Nigeria (Olajojo, 2016). No wonder the Nigerian environment continues to depreciate in quality.

Ibadan is among West African cities that is increasing by more than 100,000 inhabitants annually, a reflection of the combined effects of natural increase and net-migration (Ahaneku and Adeoye, 2014). Eleven (11) local government areas (LGAs) were enumerated in Ibadan for easier administration. Five of the LGAs were enumerated in the metropolis, while the remaining six were enumerated in peri-urban areas. Ibadan which is the capital city of Oyo State in Nigeria is bedeviled with environmental problems especially, in the metropolitan city. Enormous quantity of wastes of different types, about 48,586 tonnes is generated and disposed indiscriminately in water bodies, and on land creating offensive odour which pollute the air in the city each year (Sustainable Ibadan Projects (SIPs), 2015). There is direct dumping of solid wastes (domestic, agricultural and industrial) in open dumps, rivers, buildings under construction and even open defecation by both young and adult. This

practice is seen as one of the major serious challenges confronting the city (Adelekan, 2016; Taiwo and Ajayi, 2013; Omoleke, 2004). The sanitary situation of Ibadan is worrisome. Environmental health-related challenges, such as typhoid, dysentery, cholera and diarrhea, are prevalent especially among the urban poor (Adelekan, 2016). This perhaps informs the submission of Gbadamosi (2012) who points out that of all costs of environmental deterioration, especially in urban areas, havoc to people's health is by far the uppermost.

During the first incidence of cholera in Ibadan in January, 1971, the areas of earliest infection were the traditional core of the city. In this cholera epidemic outbreak, over 500 persons were reported to have died (Adeshina, 1981). Lawoyin, Ogunbode, Olumide and Onadeko (1999); Ahaneku and Adeoye (2014) note that outbreaks of cholera have been recurring with increasing frequency since the first outbreak. For instance, there was a cholera outbreak in some parts of Ibadan North West Local Government in the year 2011. Fifty houses were reported to be seriously affected, leaving four people dead while sixteen others were critically ill (Eribake, 2011). The Director of Environmental Services in the Council, said that Ayeye community was the worst hit. He said that the epidemic was caused by the absence of toilet facilities and waste bins in most of the houses in the affected communities. Most residents of areas like Abebi, Ekotedo and idi Ikan defecate in gutters and other places as feces and other dirt littered the areas ([www.vanguardngr.com/...](http://www.vanguardngr.com/)). Hence, the unhygienic attitude of the people living in the areas caused the epidemics. Many other diseases such as tuberculosis, whooping cough, and tetanus are becoming more widespread in urban areas especially, the unplanned urban areas, as a direct result of congestion and poor hygienic situation.

Recent studies further highlight the effects of pollution on the quality of water in wells especially of slum communities in the city (Ahaneku and Adeoye, 2014; Ochieng, Ojo, Ogedengbe and Ndambuki, 2011). Survey of slum communities in Ibadan South East LG shows that nearly all wells are disgustingly contaminated by practices such as unhygienic management of wells, closeness to possible pollution sources such as pit toilets, indiscriminate disposal of wastes and poor hygiene. These communities are therefore prone to water-borne diseases due to their reliance on polluted wells for their water supply (Tomori, 2012; Ochieng et al, 2011). Also, in the slum community of Foko in Ibadan South West LG, biological contaminants exceeded

the recommendation of World Health Organization (WHO) drinking water quality guidelines in shallow wells constructed near pit latrines (Ahaneku and Adeoye, 2014).

Ibadan has also recorded varying degrees of flooding which has resulted into loss of lives and properties. Specifically, 1980 and 2011 floods would be evergreen in the memory of Ibadan people. From research, some of the causes of flood in Ibadan are: dumping of refuse over the years leading to filling up of ponds, and blockages of other natural water ways or drainages, high intensity rainfall, dam failure, rapid rate of unplanned settlement leading to poor structures, poor or no drainage system, degraded environmental sanitation among many others. The perceived poor population habitually resorts to frequent and haphazard disposal of their refuse into accessible plots of land, buildings under construction, walkways, roadsides and median, rivers, waterways and other accessible places. More than 70 percent of the trash produced in the city is thrown away through these ways (Badejo, 2015). Hundreds of people lost their homes and possessions in the floods mainly caused by wastes blocking up the city's drainage (Okuku, 2017).

Besides, the persistence of synthetic bags and plastic bottles in the surroundings has been a particular problem. According to the United Nations Environment Programme (UNEP, 2005), synthetic bags can take up to 1000 years to break down. They add to horrid refuse in open places, worsen by their light weight and parachute-shaped design which allow them to move easily through the air and water ways especially in Ibadan metropolis. The people's health and wellbeing are affected because the synthetic bags serve as reproduction grounds for malaria-carrying mosquitoes and can block sewers and storm-water drains leading to flooding as water body find alternative route. Similarly, they create danger to wildlife that may become entwined in them or accidentally eat them. Research suggests that plastic (synthetic) can draw and soak up persistent organic pollutants (Rios, Moore and Jones, 2007). No wonder, 2018 World Environment Day (WED) theme is "Beat Plastic Pollution". All these and many other environmental hazards have been witnessed continuously in Ibadan for many years (Fafioye and John-Dewole, 2013; Sridhar, 2012).

In order to curtail these environmental menace, the Ajimobi-led administration through Oyo State Waste Management Authority (OYOWMA) evacuates refuse indiscriminately dumped on sidewalks, roadways and median with refuse trucks, provided in some strategic locations big refuse bins, introduced private refuse collectors to service the residents of the city, employs road sweepers to sweep her major roads,

clears major drainages filled with refuse for easier passage of water, and also declares every Thursday of the month as special environmental sanitation day. The exercise is expected to hold between 8a.m and 10a.m. Though, restriction of movement is not involved but, commercial activities in markets and motor parks are however, not permitted. The exercise is expected to go alongside with the usual environmental sanitation exercise holding on last Saturday of every month. There are also Oyo State Environmental Sanitation and Waste control Regulation (No. 6 vol. 38 of 2013) and Oyo State Waste Management Authority laws of 2004 which are to guide people's environmental behaviour. Anybody found guilty of violating any of these environmental laws is being penalised (Gbenga-Ogundare, 2017). All these worked to some extent until the government decided to remove the refuse bins ordering that everyone in the state should patronize the Private Refuse Collectors. This order was flouted as residents continued dumping their refuse at the locations where the refuse bins had been removed and other public places. Invariably, environmental problems linger on.

This environmental menace has been attributed to people's lack of environmental awareness, inadequate knowledge, poor attitude towards environment and environmental issues, poor environmental practices, lack of necessary skills to identify, prevent and solve environmental problems, among others (Oladimeji, 2017; Olajojo, 2016; Durojaiye, 2015; Oyewale, 2015; Gbadamosi, 2012; Gbadamosi, 2015; Ajiboye and Ajitoni, 2008; World Bank, 2006; Ajitoni 2005, Adekunle, 2005; Okebukola, 2001; Mansaray, Ajiboye, and Adu, 1998; Olagunju, 1998; and Ige, 1998). Others have pointed to socio-cultural practices as possible causes of environmental degradation (Adelekan, 2016; Oladepo and Sridhar, 2012; Ogunade, 2007; and Maccio, 2004). The saying "mi o le fi owo ra eko, ki n tun fi owo da ewe re nu", meaning "I cannot buy pap with money and still use money to dispose its wrapper" strongly shows the level of people's attitude towards sanitation. The environmental attitude of people needs to be changed positively.

The lackadaisical attitude of most Nigerians towards the natural environment has been alluded to by Edu (2000:42) the then Chairman of the Nigerian Conservation Foundation (NCF), when he said:

I am amazed some people can't understand the point about conservation. Some people say they can't be bothered because they would have been long dead before the desert gets to their doorstep. I think that is selfish and unfortunate attitude. We should all be concerned about what becomes of the world after we are gone. The called truth is that without plants, we can't even have drugs. We should not destroy what God has given us. The continued existence of the human race depends on nature.

In confirmation of this observation, human beings ignorantly carry out several activities which are capable of causing environmental degradation such as bush burning, strip mining, overgrazing, oil exploitation, destructive logging of forests, over-cropping of arable lands, indecent disposal of domestic and industrial wastes, and open defecation practices (Ukpong, 1994) as well as ineffective solid waste disposal and management, legislation and follow-up of policies by the government (Isiguzo, Ndikanwu and Adebajo, 2011; Gbadamosi, Ajagbe and Awolola, 2010; Osibanjo, 2008). Many as a result of where they live, their culture, religious beliefs, gender roles, among others carry out some actions which affect the environment negatively. These actions directly or indirectly are passed down to the younger generations. Hence, environment is threatened. Nigeria has one of the worst environmental records in the world (FAO, 2005). Every problem has a solution only if people perhaps change their attitude. It is therefore our positive attitude towards the environment that can prevent or eradicate environmental problems.

In response to local and global environmental problems, the world over has been paying renewed attention to the issues of environment. Such world-wide concerns as regards the necessity to have something done on the management and development of the environment for human kind impelled the United Nations to organise a conference on environment of human in Stockholm between 5th and 16th June, 1972. The Stockholm Conference brought up the idea of celebrating the environment through what was tagged World Environment Day (WED) on 5th June every year. The motive of doing this was to sensitise the people via different programmes and activities which had to do with the environment. The 2016 WED was held in Angola with the theme: Zero tolerance for illegal wildlife trade while that of 2017 WED was held in Canada with the theme: Connecting people to Nature. India was the world host of 2018 World Environment Day with "Beat Plastic Pollution" as the theme for the year's

edition. Indonesia was the hosting country of the 2019 edition with the theme: Reducing air pollution. The teaching of environmental education as an interdisciplinary subject also came up from the conference. Regardless the causes of environmental problems in countries, the conference hoped that if environmental education is properly taught it would solve the problems.

In view of this, the conference emphasised the training of would-be teachers, teachers in service and other stakeholders in the field of education on environmental education. This would allow them to integrate environmental dimension effectively into their individual educational activities and programmes. The training according to the conference was meant to help in the development of environmental integration skills and the use of interdisciplinary approach for achieving the objectives of environmental education effectively (Ogunbiyi, 2006).

Since 1972, several other world conferences and summits - 1975, 1977, 1992, 2000, 2002 among others have been held in the quest to addressing the menace, but little is achieved as environment continues to deteriorate in quality. This perhaps led to the 2012 United Nations Conference on sustainable development known as Rio+20 conference held in Rio de Janeiro, Brazil. Among other things, the conference recognized the link between environment and sustainable development. Sustainable development according to United Nations Environmental Programme (UNEP, 2010) is a programme to enhance people's qualitative life within the carrying capacity of the earth's life support systems, that is, meeting the needs of the present generation without destroying the resources in the earth in a manner that the future generation will find it difficult to meet their own needs. The agreement which all the countries in attendance reached in addressing the issues of the environment and sustainable development for all people of the world led to the strong recognition of improved education for sustainable environmental development. There was also the adoption of 17 Sustainable Development Goals (SDGs) by the United Nations General Assembly (UNGA) in September, 2015 with the aim of ensuring economic development, social equity, justice and environmental protection by the year 2030.

The interdisciplinary nature of environmental education with interdisciplinary approach as its method of teaching to achieve sustainable development was further emphasized by the Assembly. This might have informed the submission of Aarnio-Linnanvuori (2016) that environmental matters are mostly linked to school disciplines which are sciences by nature and geography, but social and ethical issues as regards the

environment are as well germane. Arising from this is the need to use Social Studies as an Interdisciplinary school subject where human beings study and learn about the problems of continued existence in the environment.

The current status of Social Studies as “reflective enquiry” requires the sensing and identification of significant problems and the serious and continuous search for satisfactory answer. Answers are drawn from data collected from many disciplinary sources. Integrated approach to social studies avoids the arbitrary distinctions that divide academic disciplines in schools, colleges and universities (Oladiti, 2010). Due to the fact that social problems and issues have many dimensions, they are rarely the property of any single academic subject or discipline. Hence, an integrated Social Studies provides general education that fits in better than courses featuring in specialized knowledge associated with the individual school discipline (Ogundare, 2001).

The most important aim of Social Studies is to guide or assist learners acquire a store of tested theory or body of principles which are relevant to contemporary societal situations (Oladiti, 2010). It is deduced from the foregoing that the discipline places its focus on the utilization of knowledge from whatever sources in meeting the practical problems which confront a citizen. Social Studies involve applying information to social problems and using the most important, responsible and intellectual processes to the resolution of these problems. Social Studies deals with human’s social, economic and political behaviours at any place where people live either now or in the past (Lee, 2006). It is premised on the ability of the social studies curricula to contribute to the solution of the problems emanating from the behaviour of human and to promote right citizenship values. Hence, one of the objectives of teaching and learning of social studies is to inculcate environmental literacy (adequate environmental knowledge, formation of desirable attitudes and practices) in junior secondary students.

It should however be noted that the limited and finite nature of most environmental resources and the persistent increase in the incidence, severity and complexity of environmental problems arising from human’s poor relationship with the environment negate the realization of the aims and objectives of teaching environmental education concepts in Social Studies in junior secondary schools. Literature reveals that relatively low achievement has been made in using Social Studies education in providing adequate environmental knowledge, forming good attitude and developing responsible environmental behaviour in the students when

compared with the severity of environmental degradation and serious health problems associated with the environment (Oladimeji, 2017; Adejo, 2016; Gbadamosi, 2015; Ajitoni, 2011; and Ogunbiyi, 2009).

The knowledge, values, attitudes, practices and commitments needed by the young ones to care for and improve the environment are relatively low. The increasing negative environmental practices leading to environmental problems in the society might partly be traced to the decreasing environmental knowledge of the young ones as environmental knowledge is seen as an antecedence of environmental actions (Oyewale, 2015). Similarly, students' predispositions, beliefs, concern or care about the environment is not encouraging. Many are not interested in the issues that affect the quality of the environment. Many do not feel bad disposing refuse indiscriminately or even feel uncomfortable when they see refuse dumped indiscriminately. This poor attitude they transfer into unfavourable environmental behaviour and actions. This shows in the way and manner they are being used by the adults especially parents to dispose dirt indiscriminately on open lands, drainages, rivers, road sides, median, among others, burn refuse, dump refuse in a running water during heavy rain, to mention but a few. Findings show that teachers use conventional instructional methods such as lecture method, note-taking, dictation, among others to teach environmental education concepts which only lead to accumulation of knowledge at the expense of applying the knowledge to solve practical environmental problems and develop positive attitudes in making environmentally sound decisions.

These methods have failed to give chances for learners to take part in investigation processes; involving in problem-solving and decision making. They are not adequate to make possible maximum learning in learners and change of behaviours positively towards the environment (Gbadamosi, 2015). As rightly observed by Ajitoni (2011) that through education (practical oriented education), children and youth obtain awareness, knowledge, skills and acquire the attitudes necessary to pursue successful action for sustainable environment, how (pedagogy) these awareness, knowledge and attitudes are passed to these children and youth is very essential and this is where the advocacy for instructional strategies which stress collaboration among learners, in direct contradiction to traditional competitive approaches and those which emphasise rational thinking and reasoning most especially, in dealing with value issues become pertinent in the teaching-learning of environment-related concepts in Social Studies.

However, series of research have been carried out by scholars especially, in the field of social and environmental education on appropriate instructional strategies which can be used to teach environmental education concepts effectively. Some of the strategies discovered are cooperative learning and value clarification (Oladimeji, 2017); problem-based and shadow learning strategies (Olaajo, 2016); community based participatory approach (Oyewale, 2015); service learning and educational trip strategies (Gbadamosi, 2012); outdoor learning strategies (Olatundun, 2008); value education and problem-solving strategies (Ogunbiyi, 2006); full and quasi participatory strategies (Ajitoni, 2005); concept mapping and problem-solving strategies (Adekunle; 2005) to mention just few.

The scholars report that these strategies are effective in teaching and learning of environment-related concepts most especially, in social studies but reports from studies on environment and researcher's pilot study still show that junior secondary students especially in Ibadan are deficient in environmental literacy as evident in low environmental knowledge, poor attitudes and practices culminating into diverse environmental problems: flooding, pollution, erosion, deforestation, solid waste management problem, environmental health-related diseases, among others. Some of the critics of these strategies are that most of them are used under formal classroom settings; few that are used outside the formal classroom settings did not adequately consider student's sociocultural factors such as cultural practices, religious beliefs, home location, gender role and participation in school's environmental conservation club activities.

This shows that there are other influencing factors in the teaching and learning of environmental education concepts in social studies which could improve junior secondary students' environmental literacy not yet fully examined and investigated. Understanding the root causes and effects of environmental damage as well as costs and benefits of an action is essential. Similarly, the roles of individuals in the environment need to be assessed and appreciated. Macionis (2007) noticed that none of the environmental problems hitting the human on the face now is a product of 'natural world' operating on its own. Each of the problems results from the specific actions of human beings and are, therefore, social issues which have their origins as well as their panacea in the society. By implication, then, these actions are embedded in people's culture which is a design of living in a particular society and since there are different

societies with different cultures, there are different cultural practices (actions) having effects on the environment.

Cultural practices are generally norms in behaviours and standards that developed in ethnic groups and communities in ancient history. They include broad range of activities, such as religious practices, interpersonal relationships, child care and even knowledge and practices concerning nature and the universe. According to Onyeabochukwu (2010), the cultural practices of people not only affect their health, but also affect all their affairs with the environment where they live. This is corroborated by Owen (2011) who also reports that religious beliefs, cultural values and actions shape world (environment) views, thereby influencing individual, environment and more specifically, climate literacy. The thought of the formation of the earth and the entire things that are there are essential to the basis of the cultural belief of the indigenes. Regard for the environment has constantly been with the indigenous people (Ogunade, 2007). It is imperative to state that in some Nigerian societies, traditional taboos and their penalties have assisted to control the misuse of the environment.

For example, it is a taboo in some Nigerian societies to pour hot water on the ground this is in connection with the belief that ground or soil is a spirit being which must not be hurt. The Yorubas for instance do not just dig the ground for any purpose without due permission from the soil. Also, the Ibos celebrate new yam festival purposely to appreciate the “mother” earth (soil) for opening her bowels to bring out the produce. The indigenes are of the belief that life is in the soil. In similar vein, motorists are so cautious not to kill animals (insects inclusive) while on motion. In case a duck is run over unknowingly by a driver on motion, such a driver must stop and carry out atonement in order to avert fatal automobile accidents. Moreso, the indigenous people do not hit, beat nor cut trees, bushes and grasses anyhow without taking necessary steps (Ogunade, 2007).

However, some scholars have used their searchlights to unravel some of the havoc which some traditional cultural practices pose to the environment. Bisong (2012); Pelemo (2011); Milton (1999); Happold (1987); and Sauer (1965) point out the high consumption of wild resources (bush meat), unregulated bush burning during animal hunting and farming preparations, the craze for or preponderance of traditional titles leading to destruction of local flora (leaves) and fauna (animals), disregarding the rules of environmental hygiene in the name of tradition, for instance, not washing plates immediately after eating, in order not to be hungry in shortest time, leaving some

portion of food uncovered most especially overnight purposely for spirits' consumption and many others, as traditional cultural practices which have done more harm and posed serious threat to natural environmental structures.

Moreover, it is pertinent to note that every day living conditions and social lifestyle of the people in recent times have resulted into a sort of cumulative culture created by the people themselves. This "new" culture tends to be stronger in urban cities where there is influx of large population. Practices such as haphazard discarding of refuse and open defecation in any accessible plot of land, sidewalks, roadways, medians, rivers, waterways and drainages, illegal cutting of trees, putting up structures on water ways or river banks, among others, are becoming parts of lifestyle of the people. These obviously are sources of air and water pollution, land contamination, flooding, health hazards and environmental degradation. Zion (2012); Gwanfogbe (2011); Chartock (2010); and Okeke (2007) explain that teaching and learning process has its root in culture and that culture is central to learning. They believe that children's learning cannot be separated from the child's cultural background because culture determines how he or she relates with his/her learning environment. They share the fact that the culture of the people plays a prominent role in shaping their thinking processes, and also have strong influence on environmental practices. It is believed that culture influences how people perceive and solve environmental problems.

According to Sorensen and White (1990), one of the major flaws of early investigations on environmental calamity was failure to consider the culture of human as a significant influential factor. This perhaps informed the submission of Komolafe (2011) as he reports that limitations of the many attempts to solve environmental problems most especially health-related ones in developing countries is as a result of unhealthy socio-cultural practices, poor environmental awareness and attitude, as well as low literacy level. In the same vein, Oladiti and Ajiboye (2012) are of the view that most problems that face human beings have cultural undertone hence, the cultural aspect of such problem must be examined. Thus, the environmental problems in Nigeria and Ibadan to be precise cannot be divulged from people's culture. Specifically, many studies did not investigate on Nigerians' cultural practices as a predictor of students' responsible environmental behaviour, knowledge, attitude and practices (environmental literacy). Besides, few studies on cultural practices peculiar to Nigerian environment were not combined with the other variables in this study to predict students' environmental literacy in Social Studies. On the strength of this observation,

this research therefore, intends to investigate the extent to which cultural practices predict students' environmental literacy.

Differences in religious beliefs also lead to the display of different environmental ethics by the people. These ethics either promote or demote environmental literacy if put into practice (Abraham and Chacko, 2000). On the doctrinal level, all religious beliefs have emphasized the necessity for environmental ethics in which human's interaction with his environment is clearly outlined. All religious beliefs have ethical values. This means that human beings must be directed by ethical values as outlined in their religious books and principles especially those that have to do with the environment. Such ethics make sure that a balance is arrived at between the actions of human and sustenance of a healthy environment. That is, the activities of human in the environment must not endanger the environment in any form. The major religions in the world are Traditional, Islam, Christianity, Judaism and Buddhism (Sarah, 2007). Each of these religions clinches on particular thoughts and regulations as regards the environment and environmental ethics. Religions therefore play tremendous role in promoting environmental literacy in their adherents.

Teaching in Islam stresses being in harmony and in good relationship with creation and with Allah who is all-inclusive (The Qur'an (55:1-9)). Ownership of the environment remains strictly in Allah's domain, with humans being held accountable for their treatment of divine property (Hope and Jones, 2014). Christian values toward the environment are diverse. White's (1967) seminary study in this aspect concentrated on the type of the church that emphasises texts such as Genesis 1:26 – 28. This reads that human beings were given a heavenly instruction to dominate the earth and multiply in number. In contrary, other Christians particularly among liberal and protestant denominations teach divinely sanctioned stewardship (Genesis 2:7 – 15) where human beings are placed in the Garden of Eden to care for and plow the earth.

It has been observed that traditional religion is environment-friendly in nature (Ogunade, 2007; Some, 1999; Awolalu and Dopamu, 1979). The environment and the indigenes (people) are in close relationship (Ogunade, 2007). The indigenous religions are in constant consciousness and acknowledgement of God's divine ownership of the earth. This fact keeps them in regular check that they need to be cautious in the way they relate with the earth. Perhaps this is the reason why the Igbos celebrate new yam festival purposely to appreciate the earth (soil) for opening her "stomach" to bring out food for the people, and the reason why they (including other tribes) forbid pouring hot

water on the land. Supreme Being (God) is worshipped through the physical features of the environment which are believed to have lives of their own. For instance, rivers, trees, rocks, among others are worshipped by the traditionalists.

Hope and Jones (2014) who reported the influence of religious belief on people's attitudes to environmental matters and Carbon Capture and Storage (CCS) technologies gave their findings that while all the groups – Islamic, Christianity and secular were pro-environmental, the secular group had the highest mean score. By putting different religious beliefs as regard the environment into practice, the environment is protected though, some religious practices are environment unfriendly. Hence, parents' religious beliefs have varied impacts in promoting environmental literacy in their children if put into action. A child whose parents have inculcated the spirit of environmental stewardship will always derive happiness in taking good care of his environment at home, school and any other place where he finds himself. On the contrary, a child whose spirit of environmental dominionship has been passed into will not see anything bad in maltreating the nature regardless anywhere he finds himself. In essence, one may say that religious beliefs which are basically embedded in people's culture are strong predictors to a child's environmental literacy.

In as much as environmental problems are social issues, they then have their causes as well as their solutions in the society. By implication, these social problems have their origin in the family (basic unit of society) or home individual citizens belong to. This means, in essence, that environmental problems originate from particular cultural patterns and specific political and economic arrangements, all of which have their roots in the home (Crenshaw and Jenkins, 1996). Members of a family make a home. Children are exposed to certain environmental practices at home which make or mar their environmental literacy. Thus, differences in home environmental literacy influence the development of children's knowledge on attitude to and practices in the environment.

There is no gainsaying the fact that the home or family plays an important part in the life of individual. Apart from being the major source of socialization, the family continues to influence the individual in his or her daily life. Reviewed literature indicate that there is an awareness of the importance of the home environment or family on the development of student's literacy and socially responsible behaviour. Klausmeier and Godwin (2003) observe that the forces of the home, school, neighbourhood and broader cultural influences on the students are reflected in their personal characteristics and

behaviour in the classroom. Hence, variations in home environments may be linked with disparities in children's school environmental literacy performance in the class (Gbadamosi, 2015). At times, the environmental knowledge that children take to school matches school anticipation while others may not (Compton-Lilly, 2006), school therefore needs to recognise and work on the pool of knowledge rooted in the child's social and cultural background (Martinez-Rodan and Malave, 2004).

In the view of Ajila and Olutola (2007), the home as the child's first socializing agent influences him in all ways including his thought, feelings and actions as regards the environment and environmental issues. The home environment (planned or unplanned) largely defines the personality and position of a child in the environment (Durojaiye, 2015). Several studies (Coker, Awokola, Olomolaiye and Booth, 2007; Tilbury, 1994; Wilson, 1994) have pointed out the fact that unless a child develops a sense of admiration and concern for the environment during their formative years, they then stand the danger of not forming and developing such feelings in later years. The home therefore has a great influence on students' psychological, emotional, cultural, social, environmental, religious and economic state.

Further studies reveal that, housing quality as well as the quality of the environment in which a child's home is sited possibly affect his environmental consciousness, knowledge, attitude and practices (Durojaiye, 2015). In the Nigerian situation, Oluwande (1983) concludes that children's progress is stunted by damp, overcrowded, ill-ventilated and poorly lit accommodation. He observes that houses in the high-density areas (unplanned urban areas) have the worst environmental characteristics due to lack of potable water, conveniences (toilet and bathing facilities), solid waste disposal facility and accessible road. In contrary, low-density areas are with environmental infrastructures such as drains, tarred roads, sanitation waste disposal, among others. Social ceremonies like naming, marriage, chieftaincy, burial outings, among others are done on the main roads in most unplanned areas, leaving the main road on unsanitary conditions with leftover food, food wrappers (mostly nylon wrappers), bones (that of cow, chicken, turkey, fish etc), used can drinks, plastic bottles, bottle covers, etc while those in planned urban areas mostly use home compound, event halls or fields for their social outings. These differences in density zones largely influence the knowledge of, attitude to and practices of inhabitants in their environments.

Information obtained from related studies indicate that children from urban areas have better knowledge, put forth better attitudes and practices toward environmental hygiene and other environmental issues as compared to those from rural areas (Olaajo, 2016; Oyewale, 2015; Gbadamosi, 2012; Ogunbiyi, 2006; and Adekunle, 2005). The quality of a residential area not only mirrors the city development, planning and allocation mechanisms between socio-economic groups, but also reveals the quality of life of the urbanites (Cooker, Awokola, Olomolaiye and Booth, 2007). The realization of a decent home in a suitable living environment requires the availability of clean air, potable water, adequate shelter and other basic services and facilities.

On the contrary, Adeoye (2013) argues that a child's home environment is not a strong predictor of his environmental knowledge, attitude and practices as academic ability, schooling and other factors could make a child from high-density area (unplanned urban area) have higher score in environmental knowledge test, develop desirable attitudes and practices than the one from low-density area (planned urban area). These contradicting views need further investigations. Hence, this study tends to find out the extent at which students' home-location can predict their environmental knowledge, attitudes and practices.

Research findings indicate conflicting evidence on knowledge, attitude and practices of male and female students in relation to environmental issues and problems. Some came out with the findings that female students show more concern when it comes to environmental issues and problems than their male counterparts (Kissork, 1997; Block and Eckber, 1989; Arcury, 1987). That is, females show more environmental responsible behaviours when compared with males. Some findings indicated that significant difference existed between the performance of male and female students (Esan, 1999; Alebiosu, 1998; Okoli, 1997). In correlation to the foregoing, Olatundun and Adu (2013); Macdonald and Hara (2010); Olatundun (2008); and Adekunle (2005) reported that female pupils had the higher environmental knowledge and attitude mean scores than their male counterparts. These views are based on the argument that, from childhood, females are brought up to be family nurturers and care-givers. The nurturing attitudes that result from this socialization are translated into attitudes towards nature and environment and thus, more protective than that of their male counterparts. The traditional roles (gender roles) performed by female makes her to be closer to nature and naturally environmental problem solver. On the other hand, other findings showed that gender and gender roles have no impact on

students' performance (Aremu, 1998; Udokpon, 1989; Osho, 1986). Abraham and Arjunan (2004) found that only a smaller proportion of the secondary school students possess high environmentally responsible behaviour whereas no differential effect of gender and home location are noticed in their pro-environmental behaviour.

Kumar and Patil (2007) found that there is no significant difference between male and female students in their attitude towards environmental pollution and related issues. Abiona (2008); Wang and Cheng (2010) discovered that there was no significant differences in the environmental knowledge and attitude of male and female students though, there was a slight difference in their performance but not significant. Gbadamosi (2012) is also of the view that gender is not a strong determinant of pupils' knowledge, attitude and practices in environmental issues and problems in social studies. Similarly, Oyewale (2015) in his work reports that gender has no significant effect on participants' environmental knowledge, attitude and practices. These contradicting views on the influence of gender on learning outcomes in environmental related concepts need to be further investigated upon. This, the present study is set out to do. Moreso, this study intends to find out whether the gender roles carried out by male and female students influence their knowledge on, attitude to and practices in the environment. Also, gender in the previous studies was used as moderator variable and not as predictor variable to students' environmental literacy which this study is set out to work upon.

The recognition of extra-curricular activities in the school strongly points to the fact that all cannot be learnt within the four corners of classroom instruction. There are a number of learning experiences which can be learnt outside the formal classroom instruction (Gbadamosi, 2015). School-based club is an example of a forum where learning takes place informally under a relaxed atmosphere through active participation of students in the activities of the club. Olatunji, Henry and Akanji (2003) describe club activities as school based statutory activities carried out outside the formal classroom instruction generally referred to as "extra or co-curricular activities". They further explain that they are integral parts of the school diversified curriculum content such as; literary and debating club, science club, farmers' club, cultural club, drama club, press club, environmental conservation club, readers' club, etc. Club activities according to them are academic presentations that form part of curricular activities controlled, co-ordinated and supervised by the teachers and the entire school authorities.

It is imperative to note that these activities are very essential because according to Yore (2000), when suitable learning experiences are made available for students, they use these to build their own knowledge base. Such activities provide concrete, active learning experience and relevant information beyond classroom learning activities and also give students the opportunity to develop communicative competence skills and other life-long skills (Afolabi, 2008; and Salako, 2014). Many Scholars have worked on school's clubs, for instance, Adebile (2014) worked on drama and readers' clubs, Onabanjo (2010) carried out his studies on literary and debating club, Sarver, Johnson and Verma (2002) worked on music club, Stephen and Schaben (2002) conducted their studies on sports club. They report that students' participation in school's clubs activities has positive effect on their learning outcomes. Club activities therefore aid the over-all development of a child.

Participation in school's environmental conservation club activities as one of the variables in this study, is not only relevant to the teaching and learning of environmental education concepts in social studies alone but will also help to improve learning outcomes in other environmental related subjects in the school. This is so because of the interdisciplinary nature of the subject – its contents are infused into the school subjects' curriculum. Moreso, participation in school-based environmental conservation club activities is relevant to other variables in the study. That is, students from various cultures, religious backgrounds, residential areas (planned and unplanned) and of gender types (male and female) are all members of school's environmental conservation club which serves as a forum where varied views as regards the concept of environment are discussed.

According to Nigerian Conservation Foundation (NCF) News Bulletin (2015), Environmental Conservation Club (ECC) is one of the three major thematic interventions to promote environmental literacy within the school curriculum. Through the nationwide network of conservation clubs in schools, NCF has created awareness on environment and continues to sensitize young minds about human's relationship and responsibility to the environment (Edu, 2000). Aside Environmental Conservation Club (ECC), Youth Environmental Scout (YES) club which is an initiative under the Environmental Health Students Association, Faculty of Public Health, Univeristy of Ibadan, is formed to create environmental awareness in primary and secondary schools in Ibadan.

Children today are adults in future hence, they can positively change the future society when better environmental ethics and skills are inculcated and responsibilities of protecting the environment and ensuring judicious utilization of available natural resources. It is as a result of this that many associations, societies, clubs, etc are formed as informal approach to educating the young ones about their environment. In this study, both NCF Environmental Conservation Club and EHSA Youth Environmental Club are taken to be Environmental Conservation Club. Student's membership of ECC is voluntary as applicable to other school clubs. Teachers teaching environment-related subjects like social studies, geography, integrated science, etc serve as students' guides in the club while in some schools, Environmental Health Students serve as Facilitators.

Despite the importance of participation in school-based environmental conservation club activities to students' environmental literacy still, the volume of empirical studies available on teaching and learning of environmental education concepts largely focused on formal classroom instruction. Hence, leaving the school's informal approach to the teaching and learning of environmental education as an area for further research. This informal approach includes the use of students' participation in environmental conservation club activities in the school as a forum for enriching teaching and learning of environmental education thereby improving students' knowledge on and attitude to environment leading to the demonstration of good environmental practices. Scholars (Olaajo, 2016; Oyewale, 2015; Durojaiye, 2015; Salako, 2014; Gbadamosi, 2012; Ajitoni, 2011; Ajiboye and Ajitoni 2008; Olatundun, 2008; Ogunbiyi, 2006; Ajitoni, 2005) have stressed the benefits of students' active participation in the learning process; that it helps students to generate their own learning through team work, collaboration, participation, free and relaxed atmosphere thereby creating a community of learners.

Harrison, Bisong, Akintoye and Ukata (2015) report a positive relationship between students' participation in environmental conservation club activities and achievement in environmental management education in their study on the effectiveness of environmental conservation club in improving the level of students' knowledge on, attitude to and practices in environment. Adepoju (2012) postulates that the best attainment of environmental conservation habits is by being an active member of the school environmental conservation club. Wahab (2006) affirms strong positive relationship between students' participation in environmental conservation club activities on students' attitudes and understanding of environment-related concepts in

Social Studies. Mansaray and Ajiboye (2000) confirm a significant positive relationship between membership of environmental conservation club and environmental knowledge.

However, Benson (2011) argues against the positive effect of students' participation in environmental conservation club activities and learning outcomes and submits that the levels of academic achievement, attitude formation and practices through students' participation in ECC club activities depend on the mode of organisation and supervision of the club. Adepoju (2003) also argues that the issue of membership of environmental conservation club as it affects learning outcomes in environment related subjects should be probed beyond the mere members and non-members dichotomy. He opines that membership of the club should be in addition to how "active" members and the club are, in the school, the ownership status (public or private owned) of the school as well as student-related factors. These conflicting findings necessitate further studies on students' participation in ECC activities vis-à-vis the teaching and learning of environment-related concepts in Social Studies.

Though schools' environmental club activities have been used successfully to enhance students' improvement in environmental management and protection outside the shores of Nigeria, much work has not been done in this area in Nigeria, most especially in improving environmental literacy in Social Studies among Junior Secondary Students. Most researchers in Nigeria have used this strategy in sciences, most especially, in Basic Science and Biology either to examine its influences in achievement in or attitude to environmental education concepts on the subjects respectively (Olagunju and Makinde 2004; Fasasi, 2008; Oladejo, 2011) but have not actually related it to environmental literacy in social studies.

Still on the foregoing, Aworanti and Abimbola (1997) observed that the categorization and weighing of the prescribed activities for teaching the environmental education topics reveal that 77.3% are indoor activities and 22.7% are outdoor activities. In confirmation of this finding, Olagunju and Makinde (1998) in their study analysed the teaching activities for teaching the environmental education concepts in schools and report that 68.95% are indoor activities while 31.05% are outdoor activities. These analyses reveal that environmental education teaching and learning activities are not exhausted in the classroom most of the time. Time factor, the assessment procedure, the possibility and conveniency of bringing nature to the

classroom, among others, are reasons why all prescribed environmental activities can not take place in the traditional formal classroom.

This imbalance and gap in the teaching and learning environmental concepts most especially, in Social Studies, is school clubs, specifically, environmental conservation club may balance and fill. There is a need for informal approaches such as the use of environmental conservation club activities which allow deeper understanding of environment-related concepts in social studies and give learners the chance to relate with their environment and also make them and their facilitators to collaboratively engage in worthwhile activities that will improve student–student and student–teacher collaborative activities in order to promote environmental literacy when such activities are well related to social studies classroom lessons and learning experiences. Moreso, from the available literature, studies on Environmental Conservation Club Activities (ECCA) was mostly experimental in nature and besides, students’ participation in ECCA were not combined with other variables (cultural practices, religious beliefs, home-location and gender-roles) of this study. These justify the researcher’s interest in investigating the extent to which school-based environmental conservation club activities combined with other variables of the study could enhance students’ knowledge on, attitudes to and practices in environmental education concepts in Social Studies in Nigerian Junior Secondary Schools.

The acquisition of environmental knowledge, attitudes and practices that provide lasting solutions to environmental problems make one to be environmentally literate. Hence, environmental literacy is described according to Orr (1992) as the capability for a contextual and detailed understanding on an environmental problem in order to enable for analysis, synthesis, evaluation, and ultimately sound and informed decision making at a citizen’s level. The overall aim of teaching and learning environmental education is to make people environmentally literate (Roth, 1992). Environmental literacy is about knowledge, feelings, practices and activities grounded in familiarity and sound knowledge toward improving the quality of the environment (Schneider, 1997). Environmental literacy seeks to modify the behaviour of human so that human can relate with the environment in a friendly and sustainable manner. The future of our country strongly relies on a cultured public who will become stewards of the very environment that keeps us going, our households, communities and incoming generations.

Environmental literacy therefore assists in developing and expanding children's critical thinking skills, get them ready for environmental citizenship, raise their admiration of the natural world, and improve their physical well-being. This means that "environmentally literate" students will have knowledge, attitudes and skills of practice to effectively solve an environmental problem in their ability, and to regularly consider the environment in their work and every day livelihood (Orr, 1992). The process of children's environmental literacy improvement is influenced by sociocultural perspectives of learning (Hammer and Miccio, 2004). Moreso, sociocultural theory of Vygotsky (1978) and ecological theory of Bronfenbrenner (1986) emphasise that relations among people, as well as relationship between people and their surroundings have impact on learning.

In short, environmental literacy is holistic in nature, as it involves acquisition of adequate environmental knowledge (cognition), formation of better environmental attitude (affective), and the display of favourable environmental practices (psychomotor) which make up the domains of human development so as to recognise environmental challenges, seek for ways out and take actions to avoid future ones. In view of this precept, Ibrahim and Babayemi (2010) report the need to develop the environmental literacy competency of students and other significant individuals in Nigeria. They admonish the fact that due to increasing urbanization and population, Nigeria is concomitantly faced with a myriad of socio-environmental problems. For instance, increasing urbanization and population make environmental pollution to be a challenge to public health in Nigeria. Deterioration of the environment and unhygienic situations have affected Nigeria in recent years particularly in high density zones (Ebong, 2014).

Aside the fact that many studies carried out on environmental literacy are experimental in nature with major emphasis on instructional strategies and moderator variables such as gender, academic ability, school location, to mention a few, much has not been done as regards, the influence which predictor variables such as students' cultural practices, religious beliefs, home-location, gender-roles and participation in environmental conservation club activities have on students' environmental literacy in Social Studies. Hence, this study is a survey study correlating students' sociocultural variables (cultural practices, religious beliefs, home-location, and gender-role and participation in environmental conservation club activities) with environmental literacy in Social Studies.

1.2 Statement of the problem

One of the objectives of teaching and learning of Social Studies in the junior secondary school curriculum is the inculcation of environmental literacy (acquisition of adequate environmental knowledge, formation of desirable attitudes and the skills to relate with the environment in a sustainable manner). However, studies have shown that Junior Secondary Students in Ibadan are deficient in environmental literacy as evident in their low environmental knowledge, poor attitude and practices culminating into diverse environmental problems such as environmental health-related diseases, pollution, flooding, erosion, deforestation, among others as a result of unhygienic environmental practices, indiscriminate disposal of refuse and sewage, ineffective waste management, refuse burning, to mention but a few. The young ones are mostly sent by adults to carry out most of these unfavourable environmental practices and ironically, they are the major victims of these problems. Previous studies focused largely on intervention programmes geared towards improving environmental literacy with little consideration for students' sociocultural factors. Moreso, most interventions were applied under formal classroom setting. Moreover, previous studies have shown that sociocultural variables of the study are strongly linked to learning outcomes in other school subjects like biology, geography, among others, but the extent to which they would combine to predict students' environmental literacy in Social Studies has not enjoyed much research focus especially in Ibadan. More importantly, the study explores the practical dimension of environmental literacy – formation and development of sustainable empowerment skills. Thus, the need for this study. This study, therefore, was carried out to investigate students' sociocultural variables (cultural practices, religious beliefs, home location, gender role,s and Participation in Environmental Conservation Club Activities – PECCA) as predictors of environmental literacy in social studies among junior secondary school students in Ibadan metropolis, Nigeria.

1.3 Research questions

The following are the research questions raised for this study:

1. What relationship exists between the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) and
 - a. Environmental knowledge?

- b. Environmental attitude?
 - c. Environmental practices?
- 2. What is the composite contribution of the independent variables (students' cultural practices, religious beliefs, home location, gender-role and participation in environmental conservation club activities) to the students'
 - a. Environmental knowledge?
 - b. Environmental attitude?
 - c. Environmental practices?
- 3. What are the relative contributions of each of the independent variables (students' cultural practices, religious beliefs, home-location, gender-role and participation in environmental conservation club activities) to the students'
 - a. Environmental knowledge?
 - b. Environmental attitude?
 - c. Environmental practices?
- 4. Which of the independent variables would predict students'
 - a. Environmental knowledge?
 - b. Environmental attitude?
 - c. Environmental practices?

1.4 Scope of the study

This study investigated the extent to which students' sociocultural variables (cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) would predict students' environmental knowledge, attitude and practices (environmental literacy). This research work was carried out among Junior Secondary School II students in thirty (30) Junior Secondary Schools (public and private) with Functional Environmental Conservation Clubs (FECCs) in five local government areas enumerated in Ibadan metropolis. Fifty (50) Junior Secondary II students who were members of the club were randomly selected from 14 schools, while in other schools where members were less than 50, all were enumerated. In all a total of one thousand, one hundred and thirty-seven (1,137) students participated in the study. The study covered environment-related concepts in Social Studies such as environmental resources, pollution, flooding, deforestation and solid waste management.

1.5 Significance of the study

The findings of this study would to a large extent expose students to some variables that are potent enough to significantly predict students' learning outcomes in environment-related concepts in Social Studies. It is also expected that results from this study would provide empirical information on the extent to which students' sociocultural variables can relate and predict students' environmental knowledge, attitudes and practices. This would help Social Studies teachers to understand the feelings, actions and performance of learners on environment-related issues. Thus, making them to see the necessity of changing negative environmental attitude and practices and encouraging positive ones among the students. It would serve as eye opener for school authorities to encourage the formation and activities of school-based clubs especially environmental conservation club in schools and to encourage Social Studies teachers to include such activities among the learning activities, and use them while teaching environment-related concepts in Social Studies.

More importantly, this study would explore the practical dimension of environmental literacy. It would help in bringing out and developing the students' diverse sustainable empowerment skills such as creative skills, social skills, communicative competence skills, leadership skills, critical thinking skills, among others, with which to relate with their environment in a healthy way. After all, education should be for empowerment and not for employment.

Also, it would give Social Studies teachers insight into innovative informal participatory approach (students' participation in environmental conservation club activities). With this, the study would help them not only to encourage students to participate in environmental conservation club activities but, would be able to link school-based environmental activities with effective teaching of environment-related concepts in Social Studies and use this to improve students' achievement in environmental literacy in Social Studies.

Moreover, curriculum planners, designers and other stakeholders in Social Studies curriculum would benefit greatly from the study because the findings would make them to be aware of the extent to which the independent variables (students' cultural practices, religious beliefs, home-location, gender-role and participation in environmental conservation club activities) in this study could jointly and relatively predict students' environmental literacy in Social Studies. Such insight would motivate them to ensure that these student-related variables are taken into consideration when

planning and reviewing Social Studies curriculum for junior secondary school education in Nigeria.

Finally, this study is expected to guide the government (local, state and federal), non-governmental organizations (religious bodies, environmental groups, women associations, etc) parents and other significant groups, on the possible areas of intervention in order to improve students' environmental literacy in Social Studies and other environment-related school subjects on one hand and environmental sustainability on the other.

1.6 Operational definitions of terms

Cultural practice: This refers to the traditional and habitual actions of students in relation to nature and environmental issues in their home and school environments as measured by Students' Cultural Practices Questionnaire (SCPQ).

Religious belief: This is students' level of allegiance to Christianity, Islamic or traditional religious tenets in relation to nature and issues of the environment as measured by Students' Religious Beliefs Questionnaire (SRBQ).

Home location: In this study, this means where students' residences are situated which determines the environmental activities they involve in and problems they are experiencing.

Gender role: This refers to the environmental behaviour or activities which students do based on their sex type (male or female) as measured by Students' Gender Role Questionnaire (SGRQ).

Co-curricular activities: These are the learning activities that are not included in the school syllabi but are made available outside the normal classroom setting through the schools' clubs.

Participation in Environmental Conservation Club activities: This is the level of students' (club members) active involvement in the environment-related activities organized by the school-based environmental conservation club as measured by Students' Participation in Environmental Conservation Club Activities Observation Scale (SPECCAOS).

Environmental knowledge: This is the level of students' acquisition of facts, ideas and experiences in relation to environment as indicated by the scores of students in Environmental Knowledge Test (EKT).

Environmental attitude: This is the students' disposition to the environment as measured in this study by using Students' Environmental Attitude Questionnaire (SEAQ).

Environmental practices: These are the various actions or activities taken by individual student in relation to his/her environment as measured by Students' Environmental Practices Questionnaire (SEPPQ).

Environmental literacy predictors: In this study, these are variables used to forecast students' environmental literacy.

Environmental literacy: This is students' environmental knowledge, attitudes and practices which are dependent measures.

Planned areas: These are students' residential areas characterized by good layout, high quality sanitation utilities, good road network and high cost houses.

Unplanned areas: These are students' residential areas characterized by poor layout, poor or no identifiable sanitation facilities, low-cost houses and possibly mud houses.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter reviews the literature that are related to this study, under the following sub-headings:

2.1 Theoretical framework

2.1.1 Vygotsky's sociocultural theory

2.2 Conceptual review of literature

2.2.1 The concept of environment

2.2.2 Environmental problems in Nigeria

2.2.2 Solving environmental problems locally and globally

2.2.4 Awareness and accessibility of environmental information in Nigeria

2.2.5 Nigerian Conservation Foundation in perspective

2.2.6 Environmental education and strategies for its integration into the school programme

2.2.7 Social Studies and environmental education

2.2.8 The concepts of environmental knowledge, attitude and practices

2.2.9 Cultural practices and the environment

2.2.10 Religious beliefs and the environment

2.2.11 Home location and the environment

2.2.12 Gender roles and the environment

2.2.13 Participation in school-based environmental conservation club activities and the environment

2.2.14 Environmental literacy and characteristics of environmentally literate person

2.3 Empirical Review of Literature

2.3.1 Cultural practices and students' environmental knowledge

2.3.2 Cultural practices and students' environmental attitudes

2.3.3 Cultural practices and students' environmental practices

2.3.4 Religious beliefs and students' environmental knowledge

2.3.5 Religious beliefs and students' environmental attitudes

2.3.6 Religious beliefs and students' environmental practices

2.3.7 Home location and students' environmental knowledge

2.3.8 Home location and students' environmental attitudes

2.3.9 Home location and students' environmental practices

- 2.3.10 Gender roles and students' environmental knowledge
- 2.3.11 Gender roles and students' environmental attitudes
- 2.3.12 Gender roles and students' environmental practices
- 2.3.13 Participation in environmental conservation club activities and students' environmental knowledge
- 2.3.14 Participation in environmental conservation club activities and students' environmental attitude
- 2.3.15 Participation in environmental conservation club activities and students' environmental practices

Appraisal of literature

2.1 Theoretical framework

2.1.1 Vygotsky's Sociocultural Theory

Sociocultural approaches to learning and development were first systematized and applied by Vygotsky and his collaborators in Russia in the year 1978. To them, human actions occur in their specific cultural contexts, with this, human behaviour is easier and better understood vis-à-vis his cultural background. The spread of Vygotsky's thoughts and the usage of his work in different national backgrounds have contributed to "a multifaceted related but heterogeneous proposals" (Rogoff; Radziszewska, and Masiello, 1995).

Sociocultural theory is an up-and-coming theory in psychology that examines the vital roles which the society contributes to human development. It lays emphasis on the importance of interaction between the developing people (younger ones) and the culture in which they live. The theory states that children learn from social interaction within a cultural context. It also acknowledges the relevance of culture and social interaction in formal education. It is of the view that children are products of their social and cultural environment, and stresses how social and cultural influences have effect on children's thinking and learning. Knowledge is thus a product of humans and is socially and culturally constructed (Ernest 1991; Prawat and Floden, 1994). Children development begins with dependence on care givers -parents, teachers and other more knowledgeable people (Vygotsky, 1978). The young ones build on the vast experiences gotten from others. That is, they use the experiences of others as their own knowledge base. The famous "genetic law of development" of Vygotsky emphasizes the relevance

of social interaction to the development of human in the society. In corroboration, Rogoff (1990) characterized this interaction process as “guided participation”. In her cross-cultural studies, she documents children’s different modes of participation with parents, teachers and peers. She discovered that even when children were not chatty associates with the grown-up ones, they were occupied in their world as participants in adult agricultural and domestic chores.

The usual arrangement and relationships between the young ones and their caregivers and other significant others afford the young ones with numerous chances to watch and partake in the skilled activities of their culture. Through recurring and diverse experiences in daily work and demanding conditions, they become skilled individuals in the particular cognitive and psychomotor activities in their communities (Wertzch, 1991). Sociocultural theory is to clarify how individual mental functioning is connected to cultural, institutional, and historical context. To study something historically means to study it in the process of change. Thus, the historical study of behaviour is not a supplementary aspect of theoretical study, but rather forms its very foundation (Vygotsky,1978). During his time, generally, learning was taken to be an outer process and development an inner process, but Vygotsky stresses the unity and interconnection between learning and development. According to him, learning opens up series of inner developmental processes that are able to work only when a child is relating with individuals in his surroundings and with his mates. Learning is not development, however, well planned learning results in intellectual development and sets in motion a variety of developmental processes that would not be possible when detached from learning.

Vygotsky strongly believes in the efficacy of social interaction in enhancing cognitive learning in children. Though, the development of cognition among diverse cultures differs. The way and how environmental literacy is achieved in western culture might not be the same course in an African culture. Every culture according to him provides “tools of intellectual adaptation”. With this, the young ones use their fundamental intellectual abilities in a way that is in line with their own culture. The development of a child’s culture comes in two stages: social level and personal level. The former occurs as a child interacts with people (inter psychological) and the later takes place within the child himself (intra psychological). The child’s relationship with people is seen to be a better way of forming and developing culture.

“Zone of Proximal Development” is another line of thought of the theorist in discussion. To him, to get clearer picture of the connection between development and learning, two developmental levels (the actual and the potential levels of development) must be examined in terms of their meanings. By ‘actual’, it means those tasks which a child can display by self or carry out without any other person(s) while potential level of development refers to what a child can accomplish with help from more knowledgeable persons (parents, teachers, peers, etc). The later according to him is preferable as it assists in developing a child’s cognition more than the former.

Vygotsky’s sociocultural theory is relevant to this study as it acknowledges the great influences in which the surrounding, social and cultural factors have on a child’s behaviour. More importantly, a child’s environmental behaviour which is mostly dictated by the way and manner in which he/she is brought up by his or her parents and older siblings, the gender roles he performs, his religious beliefs and cultural practices which have to do with the environment, the area where a child’s home is located (planned or unplanned area) and even the influence of the school (socializing agent) as regards organization and control of school-based environmental conservation club activities.

Specifically, the varied activities which take place in the society especially, those related to environment influence young children’s environmental knowledge, attitude, practices and skill acquisition. The theory highly recognizes the roles which the variables of the study – cultural practices, religious beliefs, gender roles, home location and participation in environmental conservation club activities play in students’ learning outcomes - environmental knowledge, attitude and practices. It assists in explaining child’s learning within the context of his culture and social interactions.

This theory also helps to investigate what can be attributed as influencing knowledge, attitudes and practices and how these perceptions influence learners’ environmental literacy in social studies. It is also related as the study investigates variables that could predict students’ learning outcomes in environmental literacy. For instance, participatory approach as an informal method of teaching is seen as sine-qua-non to a child’s cognitive potential development; this study involves interactions and collaborative activities between the students and their teacher and even among the students themselves. In line with the Vygotsky’s Zone of Proximal Development (ZPD), as students participate in environmental conservation club activities, they

develop the ability to identify certain environmental problems and find ways of solving those problems through social interactions. They learn to identify the problems they can solve independently (actual development) and those they will need to refer to their teachers and even parents for guidance (potential development). The theory supports the knowledge construction and knowledge sharing that takes place as teachers and students try to mediate learning within the sociocultural community of the learners.

This theory confirms the view of this study which points out that students are the products of their social and cultural environments and lay emphasis on how social and cultural influences affect the cognitive and psychological world of students. Therefore, a task-oriented approach, transforming learning process into students' active participation in environmental conservation club activities, where students are encouraged to work together in a free and relaxed atmosphere and develop skills of collaboration in solving environmental problems through the varied experiences and backgrounds of participants is hoped to be more rewarding and consequently would improve environmental literacy in social studies.

2.2 Conceptual literature review

2.2.1 The concept of environment

Literally, environment means surroundings. All things (living and non living) which can be found in one's surrounding make up one's environment. Environment thus, means all physical (natural and artificial) resources and conditions which affect the life and development of an organism. The present worldwide consciousness of the environment and its crucial role to human undertakings and continued existence started rising with the 1972 United Nation's world conference on human environment held at Stockholm in Sweden.

As identified by Obong (2007), three main aspects of environment comprise: the natural, man-made and personal environments. The man-made and personal environments mostly decide the state of a home and school environments. As opined by Eni (2005), human beings live in two worlds. The first is the world of nature comprising vegetation, animals (domestic and wildlife), highland, lowland, water bodies, climatic elements and others that are regarded as free gift of nature and which are believed to be older than human on earth. Human is thus an integral part of the environment. The second is the world of artificial (human-made world) that is, those things which human as a unique being intentionally created with the help of science

and technology purposely for his comfort and peaceful living. Social institutions (family, school, religion, etc.) and other material things such as bridges, roads, vehicles, buildings, and clothing, among others are examples of artificial environment.

Both home and school are strong social institutions which constitute the learning atmosphere most especially environmental learning for the young minds. Environmental learning has three phases: Learning about the environment indicates environmental knowledge and understanding; Learning for the environment is directed toward environmental stewardship and action while learning in the environment encourages interactions and experiences in the environment (Disinger, 1990; Murdoch, 1993). These three phases are entrenched in the education given to a child on environment in the home and school. From the foregoing, environment is represented in figure 2.1 below:

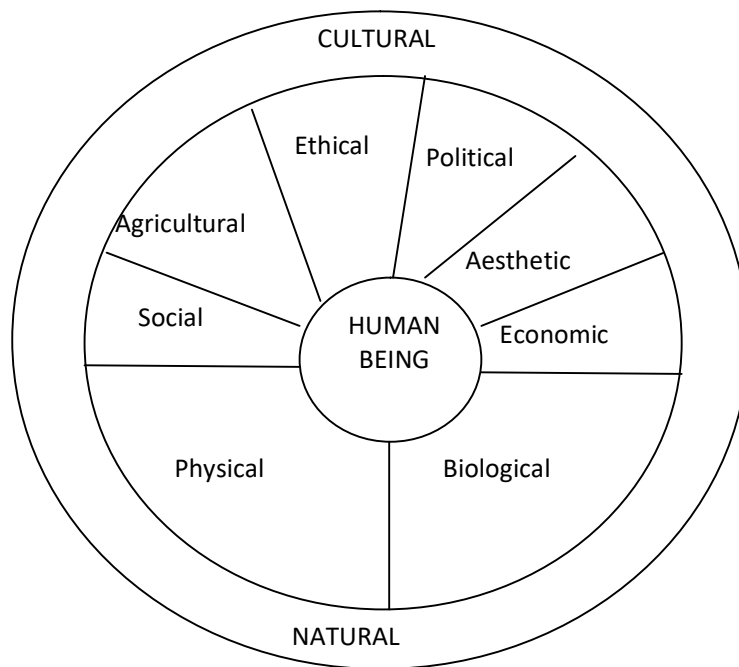


Figure 2.1: A holistic representation of environment (Adapted from Loubser, Le Roux and Dreyer (1996:6)

This model (figure 2.1) recognises the natural (physical and biological) and cultural (social, agricultural, ethical, political, aesthetic and economic) genesis of environmental problems. There is an increasing recognition of the fact that problems in the environment can be well known through the social, cultural, economic,

environmental ethics and standard of living of the people. Hence, environmental challenges are connected to all vicinity things, conditions and influences. In the model, human being is positioned at the centre of all environmental concerns.

2.2.2 Environmental problems in Nigeria

Nigeria as a developing African country has the total land area of 923,766 square kilometers and about 194 million population (Obinna, 2019). With this, it can be said that the country has a large population. The way and manner in which these millions of Nigerians relate with their individual environments has left ineffaceable scratch on the landscape. The symptoms of this scratch include; all kinds of pollution, flooding, deforestation, solid waste management problem, desertification, urbanisation, overpopulation, among others.

Pollution: Pollution can be defined as the contamination of air, water, or land with unwanted or waste objects or chemicals making them unsafe or harmful for human and other living organisms. Overpopulation, industrialization, urbanization and growth in human activities are all catalysts of environmental pollution in Nigeria and Ibadan to be precise. Air, water and land pollution are the major causes of environmental health-related diseases such as cholera, diarrhoea, typhoid, asthma, cancer, among others in Nigeria. Ibadan the capital city of Oyo State in Nigeria is not an exception of this menace as solid wastes (domestic, agricultural and industrial) are indiscriminately thrown in open places, rivers, channels, roadsides and buildings under construction. This practice is known as one of the most serious challenges confronting the city (Adelekan, 2016; Taiwo and Ajayi, 2013; Omoleke, 2004). The sanitary situation of Ibadan is worrisome. Environmental health-related challenges, such as typhoid, dysentery, cholera and diarrhoea, are prevalent especially among the urban poor (Adelekan, 2016). This perhaps informs the submission of Gbadamosi (2012) that of all costs of urban environmental degradation, damage to human health is by far the highest.

During the first incidence of cholera in Ibadan in January, 1971, the areas of earliest infection were the traditional core of the city (Adeshina, 1981). In this cholera epidemic outbreak, over 500 persons were reported to have died. Lawoyin, Ogunbode, Olumide and Onadeko (1999) noted that outbreaks of cholera have been recurring with increasing frequency since the first outbreak. For instance, there was a cholera outbreak in some parts of Ibadan North West Local Government in the year 2011. Fifty houses

were reported to be seriously affected, leaving four people dead while sixteen others were critically ill (Adelekan, 2016). The Director of Environmental Services in the Council, said that Ayeye community was the worst hit. He said that the epidemic was caused by the absence of toilet facilities and waste bins in most of the houses in the affected communities. Most residents of areas like Abebi, Ekotedo and idi Ikan defecate in gutters and other places as faeces and other dirt littered the areas (www.vanguardngr.com/...). Hence, the unhygienic attitude of the people living in the areas caused the epidemics. Many other diseases such as tetanus, whooping cough, and tuberculosis are becoming more prevalent in urban areas especially, the unplanned urban areas, as a direct result of congestion and poor hygienic situation.

Recent studies further highlight the effects of pollution on the quality of water in wells especially of slum communities in the city (Ahaneku and Adeoye, 2014; Ochieng, Ojo, Ogedengbe and Ndambuki, 2011). Survey of slum communities in Ibadan South East LG shows that nearly all their wells are grossly contaminated by practices such as unhygienic management of wells, closeness to possible pollution sources such as pit toilets, indiscriminate disposal of wastes and poor hygiene. These communities are therefore prone to water-borne diseases due to their reliance on polluted wells for their water supply (Tomori, 2012; Ochieng et al, 2011). Also, in the slum community of Foko in Ibadan South West LG, biological contaminants exceeded the recommendation of World Health Organization (WHO) drinking water quality guidelines in shallow wells constructed near pit latrines (Ahaneku and Adeoye, 2014).

Flooding: Changes in the local climate and local environmental changes in the context of urban development in most cities have resulted in increased frequency in hazardous events particularly floods and windstorms (Adelekan, 2016; Adelekan, 2015; Adelekan, 2012; Agboola, Ajayi, Taiwo and Wahab, 2012). Small increase in hazard levels due to climate change is indicated to have profound disaster impacts on the poor and resulting poverty outcomes (UN-HABITAT, 2008). The earliest documentation of flooding in Ibadan was recorded in 1902 as a result of the flooding of the Oranyan swamp and in 1924 (Tomori, 2012). In 1933, another flooding ensued when the Gege River overflowed its banks submerging houses on the river banks (NEST, 1999). Other major flooding events were recorded in the city between 1951 and 2017.

An assessment of the scale and nature of the risk from flooding in the city identified river flooding as the major flood risk source as a consequence of the generally sloping landscape and rapid urban run-off within the city (World Bank,

2014). The dense network of rivers and streams is a key factor in the generation of floods with the major rivers being Ona River, Ogunpa stream, Kudeti stream, Ogbere stream. Several other factors however contribute to flooding in the city. The flood events in Ibadan have been associated with varying degrees of physical, social and economic impacts and losses. Heavy rainfall, the lack of, or bad drainage channels, blockages of river channels, construction of buildings within setbacks, poor flood plain and river channel management, the use of the rivers and drainage channels for solid waste disposal and the damming of the Eleyele River are some of the factors contributing to flooding in the city (Adelekan, 2015). Table 1 shows flood disasters in Ibadan between 1951 - 2017.

Table 1: Flood disasters in Ibadan; estimated damage and deaths (1951-2017).

Date	Rainfall Amount (mm): climate station in Ibadan	Estimated Damages (Naira)	Estimated Loss of lives and properties
9 – 10 July 1951	161mm: Forestry Headquarters	Unknown	Unknown
16 – 17 June 1955	173mm: Moor Plantation	Unknown	Unknown
16 – 17 August 1960	178mm: Eleyele Waterworks	Over 100,000	Unknown
27 – 28 August 1963	258mm: University of Ibadan	Over 200,000	At least 2 persons
14 May 1969	137mm: University of Ibadan	Over 100,000	At least 2 persons
1973	Unknown	More than 100,000	At least 3 persons
20 April 1978	126mm: University of Ibadan	Over 2 million	Over 30 deaths, more than 15,000 displaced and 100 houses damaged
31 August 1980	274mm: University of Ibadan	Over 30 million	More than 300 deaths, over 40,000 displaced and over 50 houses destroyed.
1982	86.2mm: New Airport, Alakia	Unknown	Unknown
1984	N/A	Unknown	Unknown
April 1986	N/A	Unknown	Unknown
June/July 1987	N/A	Unknown	Unknown
10 July 2010	45mm: Old Airport Samonda	Unknown	Unknown
26 August 2011	154mm: Old Airport	Over 30 billion	102 reported deaths and extensive damage to physical infrastructures.
9 March 2012	N/A	Unknown	30 reported deaths, 5000 displaced and 100 persons declared missing
22 September 2013	N/A	Unknown	7 persons
28 June 2014	N/A	Unknown	15 reported deaths
22 June 2017	N/A	Millions of naira	3 reported deaths and loss of livelihood of many people

Sources: Adapted from Adelekan, I. O. (2016)

The Nation onlineng.net/Ibadan-floods (2017)

Dailypost.ng>Home>News (2017)

Deforestation: Forests are vast land areas with the community of plants mainly trees and others like grasses, shrubs and flowers. Forests are mostly found in sub-equatorial and monsoon climates. The relevance of forest to the survival of human and other living organisms cannot be over emphasized. The air (oxygen) humans breathe-in is gotten from the trees in the forests. Forests serve as wind-breaker, they reduce the pressure of heavy wind on human, animals, buildings and other objects in the environment. They are also sources of energy as they provide firewood and charcoal for cooking and fuel. Not only this, useful products such as textile materials, paper products, drugs, planks of wood, to mention just a few are provided by the forests. They serve as habitats for bush and wild animals if not these animals would have gone into extinction. Despite the overwhelming importance of forests, the increasing growth in the population of Nigeria coupled with high rate of poverty have increased the level at which Nigerians consume timber in recent times. According to the National Environmental Study Team (NEST, 2002), it would take less than 15 years to exhaust the forest of its timbers if deforestation is not checked on time.

Deforestation is the way and manner in which trees are cut down for many purposes without replanting another one in place of the one cut down. Deforestation is harmful to humans, animals and environment as a whole. It exposes the top layer of the soil to both water storm erosion leading to the loss of soil nutrients and death of animals. The top layer of the soil is washed inside rivers and lakes. The water becomes polluted for human and aquatic consumption. The indiscriminate felling of trees has adverse effect on the rainfall and relative humidity of the atmosphere. Not only this, such an act leads to soil erosion and infertility, flooding, desertification and other environmental problems in the country.

Ibadan is not isolated from deforestation problem as many of her forests have been turned into open lands as a result of indiscriminate cutting of trees mainly for domestic purposes (cooking and house building) by the city dwellers. The ancient Agala forest (Igbo Agala) in Ibadan for example was massively deforested during the then military head of state (Ibrahim Babangida) regime when there was scarcity and hike price of kerosene. Indiscriminate hunting, even in the so called forest reserves has led into the extinction of many animal species. Due to the rapid growth of the city in terms of population and expansion, many forest areas have been turned into residential areas. Areas like Apete, Ologuneru, Amuloko, Sagbe, among others which were known to be forest areas years ago are presently new residential sites.

Solid waste management:Waste is anything which has lost its usefulness or fails to fulfil its purpose (Gourlay, 1992).Waste has been linked with human activities and has increased since industrial revolution compared to earlier times.Waste is generated in homes, schools,offices,market places,among others.Amidst other wastes, solid waste is mostly pronounced.Solid waste is any worthless, unwanted, or discarded material that is not liquid or gas (George, 2008).Solid waste commonly generated by people are used papers, plastic bottles,nylon bags and wrappers, cartons, leaf wrappers, worn-out household utensils, maize shafts and cobs, among others.

One of the major challenges facing third world countries of the world is the insanitary discarding of refuse which emanated from the actions of human beings for continued existence (Joseph, 2006; Osinowo, 2001). The poor state of solid waste management in Nigeria is caused by inadequate sanitation facilities, poor living conditions, poor house planning, poor funding, poor implementation of environmental policies as well as wrong lifestyles. Solid waste management has to do with the packing, transportation, disposal and treatment of waste in a manner that it is not harmful to people, animals and environment in general. There is poor solid waste management in most towns and communities in Nigeria; most parts of unplanned areas in Ibadan city do not benefit from public waste disposal services due to the fact that a lot of their buildings are not facing the roads or streets directly (some are at the back of other buildings) due to the nature of family living (compound family) then where members of extended family lived in buildings close to one another in a round form.This type of family living is still in existence in the core of the city. Besides, most of the homes in this core areas do not have refuse drums hence, they bury or burn their waste or dispose of it haphazardly. Survey of slum communities in Ibadan show that these communities are prone to water-borne diseases and flood disasters due to poor solid waste management practices (Ahaneku and Adeoye, 2014; Ochieng, Ojo, Ogedengbe and Ndambuki, 2011).

Desertification: Deserts are open areas of land without water and trees, but with cover.Sahara desert is a very good example of desert spreading across Africa.When a land that was once fertile that is, with soil nutrients becomes infertile (barren) then, desertification sets-in. A desert area repels growing of trees due to the absence of water and other soil nutrients. It is characterised with sandy soil. Desertification can occur naturally or through the activities of human. Drought and windstorm with sand deposit are major natural environmental trauma causing desertification of an area.The northern

part of Nigeria experiences desertification as a result of the Sahara desert passing across the country. The Lake Chad basin which is located in the area is not excluded from this environmental hazard. Desertification is deadly. It leads to famine, diseases and illnesses such as measles, small pox, typhoid, blindness, among others, destruction of farm crops and animals. It can be checked through irrigation farming, planting of storm breakers (trees and grasses) and terrace ploughing.

Urbanization: Natural increase (high birth rate) and rural-urban migration are major causes of urbanization. Ibadan the capital city of Oyo State in Nigeria features city slums with several environmental challenges based on the level of economic development of each city slum. The failure of the development plans to meet up with the growing population leads to environmental hazards. The disposal of refuse and sewage is a major environmental problem facing Ibadan metropolis due to the increasing rate of generation of non-biodegradable and non-corrosive materials such as plastic and nylon bags. It takes about 450 years just for one plastic bottle to decompose in the ground (Asubiojo, 2018).

The display of unfavourable environmental practices such as indiscriminate disposal of refuse in rivers and other water bodies, gutters, road sides, open lands, cutting of trees without replacement, erecting of structures on river banks and channels, mostly by the urban poor in Ibadan metropolis coupled with the incapability of social amenities and services to match up with the rate at which the city is growing leads to flood disasters claiming lives and properties in the city.

Overpopulation: Population refers to a group people who reside in a particular area of land at a particular point in time. There are three major types of population: underpopulation, optimum population and overpopulation. Underpopulation occurs when the people available are lesser than the resources available in a particular geographical area of land at a point in time. Optimum population is when the number of people available matches with the generated resources from the geographical area while overpopulation refers to the situation whereby the number of people in a particular area superceeds the available resources in the area. When many people pursue few resources in the environment, the environment becomes stressed. The influx of migrants especially from less cities to cities in Nigeria makes Nigerian cities to be overpopulated. The high density (unplanned) areas are characterised with poor or no identifiable sanitation facilities, poor layout, low-cost houses, crowded homes and poor living conditions culminating into poor environmental sanitation. The urban poor mostly live in these

areas. Ibadan metropolis is not an exception as it continues to experience high increase in human number due to natural increase and migration. This is possibly the reason why high density areas in the city experience environmental problems such as pollution, flooding, solid waste management problem and environmental health-related diseases like cholera, typhoid, diarrhea among others. The National Environmental Study Team (NEST, 2002) observes that congestion has led to the extension of shanty towns and urban blot, all of which may become worst if the growing population is not controlled on time.

2.2.3 Solving environmental problems locally and globally

(A) Nigeria

Nigeria as a country is committed to a national policy which guarantees developmental sustainability based on good maintenance of the environment purposely for the needs of the present and incoming generations to be met. Apart from ratifying and signing major international environmental conventions, concerted efforts have been made in Nigeria to address the issue of environmental protection and conservation. As far back as 1981, during second republic, the House of Representatives passed a bill for the establishment of Federal Environmental Protection Agency (FEPA).

However, no giant stride has been made in that direction until the discovery of five ship loads of toxic waste of Italian origin in 1988 at the small port of koko which spurred the federal government to take urgent action that will take the populace to greater environmental awareness. Towards this end, the Federal Environmental Protection Agency (FEPA) was created by Decree No 58 of 1988 as a Parastatal of the Federal Ministry of Works and Housing. The Agency is charged with the full responsibility to control and oversee the state of the Nigerian environment. The agency has the function to motivate and aspire to raise the level of environmental actions and awareness, and take the lead in the formulation and coordination of environmental policy and monitoring activities at all levels of government (FEPA, 1995).

With a major re-organization introduced by Degree No. 59 of 1992, the Agency was transferred to the Presidency and its mandate expanded to:

- a. plan a detailed national policy for the safety of the environment and wise use of resources in the environment, involving environmental impact appraisal on all developmental projects.

- b. prepare in agreement with the National policy on the environment periodic plans for the improvement of environment, sciences and technology and to provide the financial implications for the execution of such plans for the federal government.
- i. consider the scientific and technological activities which can mar the environment and its resources in order to have a sustainable development.
- ii. to advise the President to use the money realised from the activities carried out in the environment for environmental safety.
- c. seek for the cooperation of the three levels of government and other important agencies including research institutes on issues that have to do with the safety of the environment and the conservation of natural resources.

The Decree also charged FEPA to see to the quality of water and air, check poisonous substances in the environment, control noise and implement environmental safety measures (FEPA, 1995).

Just like FEPA, the Natural Resources Conservation Council (NRCC) was born sequel to the formulation of the National Policy on the Environment. A year after the establishment of FEPA (i.e. in December, 1989) the NRCC came into being through Decree NO. 59 of 1989. The chief aims of the NRCC are the formulation of a national policy and coordination of all matters concerning the conservation of habitats species and natural resources in Nigeria.

In addition to the above, it is the duty of the NRCC to monitor the conservation programme and projects of other agencies and help to avoid or resolve conflicts; take fiscal measures to encourage the conservation of natural resources; designate and ensure the protection of habitats and species of special conservation interest; make special awards to project serving national conservation goals and funding scientific assessment of the ecological impact of projects and help control coastal zone development and minimize coastal erosion.

Today, all states of the federation spend a lot of money on environmental sanitation while the agencies (FEPA and SEPA(State Environmental Protection Agency)) in collaboration with other non Governmental Agencies (NGA) have taken further actions to arouse public awareness and encourage individual and community participation in environmental improvement efforts through the formation of environmental efforts through the formation of Environmental Conservation clubs in schools most especially secondary schools across the country.

The policy goal of the national policy on the environment is to achieve sustainable development in Nigeria and in particular to;

- i. provide a secured environment which would improve the mental and social well-beings of all Nigerians;
- ii. use the environment and its resources in a way that their usage would not deprive the future generations from using and benefiting from the environment and its resources;
- iii. renew, improve and sustain relationships among living organisms in an ecosystem;
- iv. sensitise the people on the interconnection between environment and development and to encourage individuals and the community as a whole to participate in environmental development efforts, and
- v. work together with other countries' international organizations/agencies in order to control trans boundary environmental pollution as pollution has no boundary (National Policy on the Environment (NPE), 1989).

Implementing a national environmental policy calls for taking specific actions which are directed towards the issues which have to do with the environment such as population, civilization, urbanization, agricultural and industrial revolution, among others and also environmental problems like pollution (land, water, air and noise), poor hygiene, deforestation, depletion of resources, food shortage, among others which emanate from these issues (NPE, 1989). In the quest to realize the aims and objectives of the agencies, actions were initiated to increase consciousness of the people on the important connection between environment and sustainable development and to encourage personal and group involvement in all efforts towards the development of environment through the awareness and enlightenment studies in educational curriculum at all levels (NPE, 1989).

To pursue its environmental education and public awareness, FEPA (1995) focused on the creation of awareness for environmental problems, media campaigns on environmental issues, identification, education and training of officials that would form the core of the environmental education network nationwide. Other measures by the agencies were the use of exhibition, jingles documentaries and drama on radio and television, public lectures, workshops, seminars and training programme on specific environmental management issues to enlighten, educate and raise awareness of the populace and the various target levels of the Nigerian society.

Still on environmental awareness, FEPA in collaboration with Nigerian Conservation Foundation (NCF) have encouraged secondary school students to form conservation club. It is to be noted that many secondary schools across the country have formed the club in their various schools (Wahab, 2006). The agency has also been actively involved with the World Environment Day celebrations by organizing essay competitions among school children, awareness drama, awareness song and television with radio discussions. Apart from the commissioning of the National Environment Reference Library at the Abuja headquarters' complex and part of the 1994 world environmental reference library at its Lagos Liason office (FEPA, 1995). Under its information dissemination strategy the agency has documented its programme, activities and studies in more than twenty-five published volumes. The agency's regular news letter, "The Nigerian environment" is an in-house journal containing information on the activities of the agency and variety of global environmental issues. This quarterly journal was first published in December 1989. This journal has wide distributions in 170 countries in Asia, Europe and America (FEPA, 1995).

In the wisdom of the government, FEPA and other pertinent Departments in other Ministries were fused to form the Federal Ministry of Environment in 1999 to guarantee that environmental issues are sufficiently mainstreamed into all developmental activities, but without a suitable enabling law on enforcement issues. This situation, however, left a vacuum in the effectual enforcement of environmental laws, standards and regulations in the country and National Environmental Standards and Regulations Enforcement Agency (NESREA) was established as a parastatal of the Federal Ministry of Environment. Ministry of Environment and Habitat is responsible for formulating, enforcing, coordinating policies, statutory rules and regulations on solid waste collection, disposal, general environmental protection and flood control in Oyo State.

In Ibadan metropolis, it is Oyo State Solid Waste Management Authority (OYOWMA) that is accountable for collecting, transporting, and disposing of solid waste for the people. The management of refuse in Ibadan has been so demanding over the years. Presently, the methods of collecting refuse rely on the ease of access of the OYOWMA vehicles. Collection of refuse from house-to-house is done only in those areas which are motorable (accessible) and the residents pay for this service.

The perceived poor population alternatively throw away their refuse haphazardly into accessible open lands, walkways, roadsides and median, water bodies,

waterways and drainage areas -more than 70 percent of the solid waste produced in the city is thrown away through these ways (Badejo, 2015). In order to ensure the general cleaning of the environment, the Oyo State Government through OYOWMA evacuates refuse indiscriminately dumped on sidewalks, roadways and median with refuse trucks, employs road sweepers to sweep her major roads,clears major drainages filled with refuse for easier passage of water, and also declares every Thursday of the month as special environmental sanitation day. The exercise is expected to hold between 8a.m and 10a.m. Though, restriction of movement would not be involved but, commercial activities in markets and motor parks are however, not permitted. The exercise is expected to go alongside with the usual environmental sanitation exercise holding at last Saturday of every month. There are also Oyo State Environmental Sanitation and Waste control Regulation (No. 6 vol. 38 of 2013) and Oyo State Waste Management Authority laws of 2004 which are to guide people's environmental behaviour. Anybody found guilty of violating any of these environmental laws is penalised.

(B) World

The United Nations (UN) struggles in the bid to solve environmental problems have led to major conferences, summits and workshops such as:

i. 1972 United Nations Conference on Human Environment

The United Nations Conference on the Human Environment (also known as the Stockholm Conference) was a pioneer international conference held in Stockholm, Sweden from June 5th – 16th, 1972 on world environmental issues which led to the development of global environmental politics (Bjorn-Ola and Henrik, 2003). From the conference, a Declaration containing 26 principles relating with the environment and development was adopted. Some of the environment-related principles of the Stockholm Declaration are:

1. Protection of natural resources.
2. Production of renewable resources must be further encouraged and maintained.
3. Non-domestic animals must as well be protected.
4. Non-renewable resources must be distributed among the have-not countries and should be consumed less.
5. Pollution must not go beyond the earth's ability to neat up herself.
6. Pollution of oceans must be prevented.
7. Developmental policy must not endanger the environment.

8. Human habitation must be well planned in order to eradicate environmental problems.
9. Modern science and technology must be used to develop the environment.
10. Introduction of environmental education as an interdisciplinary school subject is germane.
11. Environmental research must be encouraged and funded, mostly in developing countries.
12. Areas endangered in the course of resources exploitation must be duly compensated (en.wikipedia.org/wiki/unitednations...).

One of the decisive matters that arose from the conference was the acknowledgment of poverty elimination as a veritable tool for safeguarding the environment. The relationship between environmental management and poverty elimination was presented by the then Indian Prime Minister, Indira Gandhi, in her speech in the conference.

ii. 1975 Belgrade Charter

On the 13th - 22nd October, 1975, the importance of Environmental Education (EE) in tackling environmental problems was addressed at the International Environmental Workshop in Belgrade, Yugoslavia. Participants at the United Nations Educational, Scientific and Cultural Organization (UNESCO) workshop suggested an international template for environmental education, known as the Belgrade Charter. The Charter's goal statement on environmental education says:

Environmental education if correctly comprehended, ought to be an all-inclusive lifetime education which is suitable in meeting up with the challenges of the speedily transforming earth. It ought to get a person ready for life by having a comprehensive knowledge of the main challenges brought by the modern-day world, and also making available the attitudes and skills required to play a fruitful role towards the improvement and safety of life and environment and not undermining social ethics and values.

Environmental education was introduced to build a global population who know and care about the environment and its related challenges, and which has the knowledge, attitudes, skills, motivations and dedication to work as an individual and as a group toward solving the present problems and the avoidance of future ones. The

international seminar held in Belgrade in 1975 was the first founding meeting for environmental education (www.2uned.es/catedraunesco-educam/e...)

iii. 1977 Intergovernmental Conference on Environmental Education

The pioneer intergovernmental conference on environmental education was held at Tbilisi in the defunct Soviet Union in the year 1977 by UNESCO. In the quest to enhance relationships between humanity and nature, the conference outlined 12 guiding principles. Environmental education according to the principles is expected to:

1. examine the environment in its totality (natural and socio-cultural environment);
2. be a life long education (from cradle to grave);
3. be an interdisciplinary subject with infusion approach into school's subjects;
4. consider main environmental issues from local to global perspectives so that students get insight into environmental condition in geographical area;
5. consider the historical perspectives while addressing present and potential environmental situation;
6. recognise and appreciate the value and the need for local, national and global co-operation in the avoidance and way out from environmental problems;
7. clearly consider environment in developmental plan actions;
8. allow students to be actively involved in environmental learning experiences so that they would be able to apply the experiences in their day-to-day environmental activities;
9. relate environmental learning experiences with students' local environmental conditions from their early years;
10. enable students to find out the actual causes of environmental problems and lasting solutions to such problems;
11. lay emphasis on the complexity of environmental critical thinking and inculcation of environmental problem-solving skills and
12. apply instructional strategies which emphasise practical activities and first hand experiences from learner's learning environment.(Tbilisi Final Report, 1977).

iv. 1992 United Nations Conference on Environment and Development

The growing of industries which is one of the indices of economic development is not without its shortcomings. Pollution and environmental health-related diseases such as asthma, and other respiratory illnesses, cancer, among others are at the high side. This probably led to the United Nations Conference on Environment and Development (UNCED) in the year 1992 (twenty years after the first international conference). The conference which is also known as the Rio Conference or Earth Summit charged nations of the world to pursue economic development in a way that would not negatively affect the global environment and resources therein particularly non-renewable resources. Moreover, poverty as well as too much utilisation of non-renewable resources by affluent populations were discovered as major threats to healthy environment by the Summit.

v. Other UN's Conferences

The 1992 Earth Summit ushered in many other world conferences on environment and sustainable development. Some of such conferences were the 2000, 2002, 2012 and 2015 conferences respectively. The 2015 United Nations General Assembly (UNGA) Conference adopted a set of 17 Sustainable Development Goals (SDGs) with the aim of ensuring economic development, social equity and environmental protection. These 17 goals were adopted primarily to build on the successes of the Millennium Development Goals (SDGs) and to achieve others particularly, in reaching the most vulnerable (women, children, etc) (Babalola, 2018).

2.2.4 Awareness and accessibility of environmental information in Nigeria

Individual can only develop a reasonable feeling for something he/she knows about or has knowledge about. The kind of knowledge one possesses about certain things is therefore crucial in forming one's attitudes to such things. Similarly, the kind of knowledge one has about one's environment determines to a large extent feeling about such an environment. When people are provided with right information about the environment, they fully understand the repercussions of their actions on the environment and this makes them to be actively and efficiently involved in taking decisions which have to do with the environment (UNESCO, 1992). Environmental consciousness is a prerequisite for pro-environmental behaviour and environmental sustainability; having right knowledge about the environment and environmental matters is therefore crucial for the formation of desirable attitude and the display of

responsible environmental practices. Hence, the authority especially those in charge of the environment must make information available for the people every time (EIR, 1992).

The Nigerian government, through the Federal Ministry of Environment (FMENV) formerly known as Federal Environmental Protection Agency (FEPA) and other relevant environment-related agencies do enlighten the public on environmental matters through print (newspaper, books, handbills, etc.), electronic (radio, television, etc.) and social (whatsapp, instagram, twitter, etc.) media. FEPA (now FMENV) recommended the establishment of Environmental Conservation Clubs (ECCs) in secondary schools. The agency is in partnership with the Federal Ministry of Education on the development of environmental education Curricular for both formal and informal educational systems in Nigeria.

As fundamental as environmental awareness is for responsible environmental citizenship, it is not always a high-flying attribute of educational package in primary, post primary and tertiary institutions of learning. Agenda 21 of FEPA states that “education is vital for advancing sustainable development and enhancing the ability of the people to tackle environmental and developmental matters”, moreover, education is affirmed to be a crucial way of “forming environment-friendly attitudes, developing essential skills and behaviour reliable with sustainable development and effectual community involvement in decision-making”. This observation led to the restructuring of educational systems and practices in many states where environmental education is being introduced as an interdisciplinary school subject infused into schools’ curricular.

To pursue its environmental education and public awareness, FEPA focused on the creation of awareness on environmental problems: media campaigns on environmental issues, identification, education and training of officials that would form the core of environmental education network nationwide. Other measures used by the agency were the use of exhibition, jingles, documentaries and drama on radio and television, public lectures, workshops, seminars and training programme on specific environmental management issues to enlighten, educate and raise awareness of the populace and the various target levels of the Nigerian society.

Still on environmental awareness, FEPA in collaboration with Nigerian Conservation Foundation (NCF) encouraged secondary school students to form conservation club. It is to be noted that many secondary schools across the country have formed the club (Wahab, 2006). The agency has also been actively involved in the

annual World Environment Day (WED) celebration by organising conferences, symposia, public lectures, radio and television discussions to celebrate WED in Nigeria. She also partners with the Nigerian Conservation Foundation (NCF) and Youth Environmental Scout (YES) in using school environmental conservation clubs in promoting environmental literacy among the school children and the public through the organization of essay and quiz competitions among school children, drama, song, poem, community sensitization, radio and television discussions on environment.

2.2.5 Nigerian Conservation Foundation in perspective

The establishment of non-governmental organizations interested in environmental issues and problems in Nigeria arose due to the incapability of government and her agencies to adequately address and tackle major environmental issues and problems coupled with the need and recognition of the important roles capable of being played by organizations outside government (Ifegbesan, 1997). Today, there are many environmental non-governmental organizations in Nigeria. One of such is the Nigerian Conservation Foundation (NCF), others include the Nigerian Environmental study/Action Team (NEST), Nigerian Environmental Watch (NEW), Ecological society of Nigerian (ECOSON), Forestry Association of Nigeria (FAN), International Institute of Tropical Agriculture (IITA) just to mention a few.

The Nigerian Conservation Foundation was established by a group of well-meaning Nigerian citizens in the year 1980 after a meeting of a small group of Nigerian citizens (friends of the earth) held at the residence of the then chairman of the Foundation. Edu became the first chairman of the organization. Dafinone is the current chairman of the Foundation and Karunwi is its Director General. The Foundation since then has worked on many resource conservation and management projects all over Nigeria. It is one of the most active and pushful non-governmental conservation organizations not only in Nigeria, but also in Africa.

It is the vision of the Foundation that Nigeria becomes a place where people relate with nature harmoniously and sustainably. Its mission which is driven by its vision is to protect Nigeria's flora and fauna and encourage the conservation of all natural endowment for the advantage of present and upcoming generations; and initiate practices that reduce pollution and profligate utilization of resources especially the non-renewable ones.

The NCF secures the cooperation of Federal Environmental Protection Agency (FEPA) in particular and that of the Federal Government in general. It works closely with the federal, state and local government as well as some other non-governmental and international organizations. The foundation promotes public awareness on the nation's problems of environmental degradation, makes the public aware of the existence of some environmental laws which hitherto, were not known and also helps to develop and implement local conservation policies with local conservation activities.

Furthermore, the Foundation initiated many educational ideas and actions in order to increase sensitivity on matters relating to environment and to promote good environmental practices in Nigeria. In collaboration with the elementary, post-primary, higher education and the public, the Foundation implements these ideas. The research unit of the Foundation carries out findings and comes out with management strategies of reserve areas, wildlife centres, and parks all over the country. It draws the attention of industries to the environmental implications of their actions and how to balance economic development with environmental sustainability. In order to sensitise the public of the value of the natural endowments deposited in Nigeria's land, the Foundation encourages the conservation and visitation to some of these gifts of nature. For instance, in the year 1990, the Foundation established Lekki Conservation Centre. Many of these centres provide environmental education towards sustainable environmental awareness in schools and communities.

The Foundation partners with many global environmental institutes and associations such as the International Institute of Tropical Agriculture (IITA), the Wildlife Conservation Society (WCS), the Wetlands International (WI), the International Union for the Conservation of Nature (IUCN), World Wide Fund for Nature (WWF), BirdLife International (BI), Fauna and Flora International (FFI), and the World Wildlife Fund (WWF). The NCF also entered into partnership with numerous industrial groups such as Chevron and BG Group on matters relating to Nigeria's oil and gas industrial expansion.

In the year 1992, the United Nations Environmental Programme appreciated the immense contributions of the NCF to the environment by enlisting her in its Global 500 Roll of Honour - a set of persons and associations contributing positively to the environment ([https://en.Wikipedia.org/w/index.php?Nigerian Conservation Foundation and oldid](https://en.Wikipedia.org/w/index.php?Nigerian%20Conservation%20Foundation%20and%20oldid)). One of the most important contributions of the NCF is the evolvement of the national conservation education strategy for the country in 1988. The strategy,

among other things, recommended the teaching of conservation education in the primary, secondary and tertiary institutions of the country, the establishment of conservation clubs in schools, the appointment of conservation education coordinators in every State's Ministry of Education and the establishment of conservation education committees at national, state, zonal and local government levels. As an affiliate of the world-wide Fund for Nature in 1989, the foundation has chapters in many states with an overall membership of about 7,000 (Nigerian Conservation Foundation Annual Report, 1991).

To achieve its laudable goals, the foundation adopts strategies which combine high level lobbying with action oriented programmes. Wherever the foundation discovers that particular species and habitat are in the danger of extinction, she launches an appropriate conservation programme by either lobbying the state or Federal government to designate such habitat as a protected area or to place the endangered species under legal protection and subsequently mount conservation education and public awareness programmes in the protected area and prepare a master plan for the management of the protected area. As a non-profit making organization, the foundation relies on contribution from its members, donations and grants from national and international non-governmental organization donor agencies or raising of funds through special events.

The Nigerian Conservation Foundation has a strong partnership with the International Institute of Tropical Agriculture (IITA) in Nigeria. The IITA, Nigeria is an international non-profit organization created in 1967. It conducts research for development that targets dealing with starvation as a result of food shortage, poverty, and the dilapidation of natural resources in the tropics. It partners with the public and private sectors to boost crop for producers and consumers, and encourage sustainable source of income from agriculture. For many years, the NCF and IITA have been working together on schools' environmental conservation clubs both at the primary and secondary levels of education in Ibadan, Ilesa and Osogbo.

2.2.6 Environmental education and strategies for its integration into the school programme

In the history of mankind, the importance of education cannot be overemphasized. It has been used as a veritable tool for achieving diverse goals and objectives. Education serves different purposes, for instance, we have citizenship

education, population education, health education, sex education, environmental education, etc.

Like most concepts in the social sciences, environmental education is an elusive word, capable of several meanings. However, despite the different meanings and interpretations, there seems to be consensus among scholars on what should be the nature of the concept. According to the International Union for the Conservation of Nature and Natural Resources (1970), Environmental Education is:

the course of identifying, acquiring and developing attitudinal values and skills needed to comprehend and acknowledge the interrelatedness amidst human, his way of life and his biological environment. Also, it has to do with making decisions and forming responsible behaviour on matters that have to do with the quality of the environment (pp. 24 – 25).

The Encyclopedia Americana (1980) defines Environmental Education as a multidisciplinary approach to the study of man's problem of maintaining a liveable environment. It is an expansion of study of ecology which is a branch of biology dealing with the inter-relationship of living organisms with one another and their surroundings. Yomi (1991) opines that Nigeria's search for ways to preserve and protect the environment is incomplete without Environmental Education. Hence, for students to learn to play the role expected of them as it relates to protecting, maintaining, improving and effectively utilizing the environmental resources, there is need to put in place effective environmental education programme.

To Karl (1985) Environmental Education is;

A way of developing environmental consciousness and understanding of the surroundings, affirmative and unbiased attitude as regards the environment and skills that will help and allow learners to be actively involved in environmental quality improvement (p. 31).

In a related development, Lawal and Noibi (1991) see Environmental Education as both an inter-disciplinary course and practical problem-solving course. They also believe that environmental education is a way of building up a sense of value contribution to people's welfare which is concerned with the continued existence of human beings and their environment.

During one of the seminars organized by the Finish National Commission for UNESCO at Jemmi in 1992, Environmental Education was conceptualized as:

A means of securing the safety of the environment. It is not seen as a subject on its own but, as an interdisciplinary subject infused into the curricular of other school's subjects to form a lifelong education (p. 18).

According to Okebukola (2001) environmental education is seen as a dimension of subject matter and practice of education directed towards the resolution of practical environmental problems and crises. Adekunle (2003) sees environmental education as a study which solely not brings about environmental sensitivity but also helps human to relate with his environment in a healthy way. Environmental education is also viewed as process of recognizing values and clarifying concepts as a means of developing knowledge, attitude and skill needed to comprehend and value the interconnectedness of human with his culture and biophysical environments (Chukwuka, 2006).

Kuranga (2006) defines environmental education as a field of education integrated into the system of education purposely to improve the consciousness of learners (at every levels of education) on matters that relate to the environment. This integration if properly implemented would provide way out to the problem of environmental degradation which is as a result of the "ill" rapport between human being and the environment.

Edinyang, Eneji, Tijani and Dunnamah (2013) perceive environmental education as a branch of study which inculcates knowledge, desirable attitudes and skills into the students to bring about needed sensitivity on how to improve the quality of the environment. It has to do with making of decisions and devising a code of behaviour as regards the quality of the environment. Thus, it arms human being with important tools for taking decisions in providing lasting solutions to the problems in his/her surrounding.

The discovery of the fact that solution to environmental problems (domestic and global) do not come from environmental specialists and political leaders alone, but with the commitment and active involvement of an enlightened public (masses) in their different capacities as producers, consumers, employers, business and community leaders, as well as students at different levels of education, brought out the idea of environmental education.

From the plethora of definitions, which have been reviewed, it can be deduced that environmental education has to do with the systematic inculcation and

development in pupils and students knowledge, attitudes, skills, values and understanding necessary to enable them make rational and responsible decisions concerning the environment with a view to achieving sustainable development. Moreover, it is a deliberate attempt to educate people on how nature works and mainly, how students can maintain their behaviour and natural phenomena for continued existence. The term is frequently used to mean education given in the school.

There are a number of different parts to environmental education. The most common components of environmental education are that of; awareness, knowledge, attitudes and active involvement in events which lead to the solution of environmental problems. These are presented as thus in Figure 2.2:

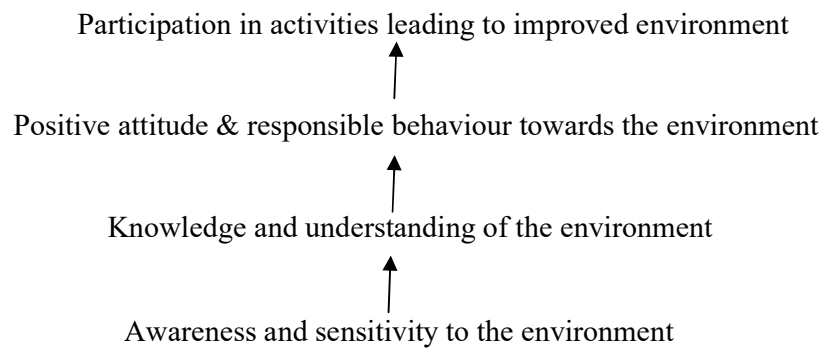


Fig. 2.2: Components of environmental education (Adapted from UNESCO, 1992). (Arrows designed by the researcher)

On strategies for the integration of Environmental Education into the school programme, curriculum theorists have recognized three modes of inclusion into the school system any new programme and these are;

- i. Separate or Monolithic subject approach
- ii. Unit of existing or revised or new courses approach
- iii. Integration or permeation into the existing course.

Suffice it to say that these modes have their strength and weakness and that the choice of which one or more of these approaches to be adopted depends on a number of factors which include the educational goals and objectives of the country, curriculum framework, students' characteristics, structure of the educational system, time framework, the broadness of the programme and its priority. However, these variables more than anything else have accounted for the choice of the integrated approach with

respect to Environmental Education. The adoption of the integration approach finds its basis in the UNESCO's (1980) declaration that:

Environmental Education should not be seen as another subject to be added to the available school subjects but should be seen as an interdisciplinary subject infused into the school's curricular meant for all learners regardless their ages. In other words, it should not be seen as a new discipline to be taught in the school system but dimension which has to be incorporated into the educational systems, programmes and process. The integration should be done in such a way that the existing disciplines and courses reflect adequately all the contemporary environmental concern of the society.

In that regard, Lawal (1991) has identified various procedures through which Environmental Education can be incorporated into the school system:

- The integration of environmental components into the different traditional subjects.
- The re-orientation of the subject-matter in the traditional subject along the line of Environmental Education.
- The re-appraisal and restructuring of the whole content of the different subjects to include environmental education components.
- The different subjects integrating the content within the framework related to the main environmental problems and this could be regarded as the most complex.

Ajewole (1990) and Lawal (1991) have argued that although there are various methods of teaching Environmental Education in schools, environmental conservation dimension can best be integrated into the school curriculum using the thematic approach. However, for such exercise to be effective, Environmental Education should be integrated into the subject area most closely related to environment especially social studies, geography, sciences and should be primarily anchored on the social, economic, political and cultural issues of the environment. More importantly, in-service and pre-service training should be organized for teachers in the area of Environmental Education to consolidate their previous knowledge (Amosun, 1999). No wonder, Falola (2003) opines that if Environmental Education is to be successful, open-minded teachers with a new view of their mission and environmental imagination will be needed. This according to him will require ecological environmental studies as a fundamental subject in the training of all teachers irrespective of their field of specialization. It is therefore believed that the teaching of environmental education formally or informally, would make people to be environmentally literate.

2.2.7 Social Studies and environmental education

Falola (2003) sees environmental education as a course of study in which human being is informed of his environmental challenges. It entails the attainment of knowledge, attitudes, skills, motivation and dedication to work as individuals and group purposely to solve the present environmental challenges and prevent the future ones (Mohammad, 2007). One of the aims and objectives of teaching and learning Social Studies is to inculcate in the students environmental literacy (acquisition of environmental knowledge, formation of desirable attitudes and the display of favourable practices). The teaching and learning of the environment-related topics in the subject help in achieving this objective. An environmentally literate student does not acquire knowledge about his environment alone, but apply the knowledge to develop desirable attitudes and solve practical environmental problems therefore, making the environment a better place to inhabit. Thus, through Social Studies, environmental problems are minimized if not totally eradicated.

Environmental literacy is the major target of environmental education (Disinger and Roth, 1992). Environmental literacy has to do with the acquisition of appropriate knowledge, attitudes, skills, and practices with which to make favourable decisions on the environment and responsibly act on such decisions. A student who is literate as regards the environment uses the acquired skills in exploring the environment in a sustainable manner. Social Studies being a study of reciprocal relationship between human being and his environment, as a result of this, students are guided to appreciate and maintain this relationship in their day to day activities. The needed knowledge to form a desirable attitude and skills to interact meaningfully with the environment are the main focus of social studies. It can be said thus that social studies assists in making the goal of environmental education achievable.

The relevance of social studies to environmental education has also been noted by Fageyinbo (2004) as he observes that the main theme of social studies is the integrative study of human being in his diverse relationships either as an individual or as a group with the different aspects of his environment. It is an interdisciplinary subject with interdisciplinary approach in studying human beings as regards their environments (physical and social). Social Studies education is an excellent integration tool that can assist students to critically examine the historical, geographic, socio-economic, political, and scientific perspectives of environmental topics in an integrated form.

Environmental education is an interdisciplinary field of study though, it is not a distinct subject in the school time-table especially, at the primary and post-primary levels of education but its contents are spread into the curricula of the existing environment related subjects. The modern approach to the teaching and learning of Social Studies is integrated approach – teaching topics, issues and problems in the environment, from many disciplinary viewpoints at once. It is also an elastic subject which accommodates emerging issues especially those threatening the survival of human-being and his environment. Its teaching methods deal with discovering, understanding and adjusting with series of challenges facing human being as he struggles to continue to exist in his environment. Thus, virtually all things which have to do with human survival are germane aspects of study to social studies (Fadeiye, 2005 and Fageyinbo, 2004). Hence, the aim of Social Studies is to make individual act successfully in his daily life as he relates not only with other people but also with the natural systems and how to ensure the sustainability of such act.

Moreover, environmental education through Social Studies makes citizens to be aware of the relevance of a sanitised and pollution-free environment which are ingredients of national development. It is seen as a course of instruction that has to do with the inculcation of adequate knowledge, desirable values and creative skills into the students which lead to the formulation of responsible environmental behaviour and hence, improving the quality of the environment. Similarly, the philosophy behind the teaching of Social Studies is the raising of effective citizenry who can contribute to the development of the country in all aspects. Michael (2000) defines Social Studies as a discipline which studies all the aspects of life which make up a complete being; physical, social, technological, economical, scientific, cultural among others- all in his environment. The critical study of these aspects does not only provide adequate knowledge about the environment as a whole but also explicate how the knowledge is transformed into favourable environmental attitudes and actions leading to sustainable environmental development (Edinyang, Eneji, Tijani and Dunnamah, 2013).

Environmental education concepts through Social Studies are introduced to a child right from his/her elementary level of education to post-elementary education. Many other environmental education carrier subjects are not offered at these crucial formative ages of school children. Still on the foregoing, Social Studies assist a child to critically look into his environment and find his own place in it. This is possible as

Social Studies provides adequate facts and information (knowledge) as regards environmental matters (Ogundare, 2001).

More importantly, Social Studies lays emphasis on the affective and psychomotor domains of learning more than that of cognitive domain. With this, environmental valuing which is the hallmark of environmental education is easily achieved through Social Studies education. The inculcation of the right type of values and attitudes which Kazi (2004) describes as “standards which determine one’s feeling (positive or negative) as regards the environment and this feeling is shown in the way and manner one relates with the environment. It is only when the aesthetic value of the environment is appreciated and cherished that its beauty is maintained and sustained. Hence, favourable environmental actions and behaviours which environmental sustainability largely depends upon are strongly encouraged in young learners through Integrated Social Studies. Value-oriented learning strategies are used in doing this.

The multi-disciplinary nature of Social Studies and Environmental Education is seen in how both disciplines which focus on human being engage in variety of activities in the environment for the purpose of improving human’s qualitative life (Edinyang, Eneji, Tijani and Dunnamah, 2013). In contrast to other school subjects which are informative in nature both social studies and environmental education belong to the applied field as they make use of knowledge, facts, theories, concepts and generalizations from different disciplines purposely to solve practical human problems. Most problems that face human beings are environmental in nature (Macionis, 2007). Hence, integrated social studies helps learners to make decisions and take actions which are conducive to the environment. Moreso, through the use of participatory instructional strategies in the teaching of environmental education concepts in Social Studies, the young ones are provided the opportunities to participate in problem-solving and decision making processes leading to the modification of behaviours positively towards environment (Gbadamosi, 2015). The main goal of environmental education which is environmental literacy is better achieved through integrated social studies education.

2.2.8 The concepts of environmental knowledge, attitude and practices

(A) The concept of environmental knowledge

Individual can only develop a reasonable feeling to something he/she knows about or has knowledge about. The kind of knowledge one possesses about certain

things are therefore crucial in forming one's attitudes to such things. Similarly, the kind of knowledge one has about one's environment determine to a large extent one's feeling about such an environment.

Knowledge about one's environment has to do with having adequate information, facts and experiences as regards environmental challenges and the discovery of way out from such challenges especially, those ones caused by human beings in the quest of meeting their needs through the exploration and exploitation of the environment (Mansaray and Ajiboye, 1997). Moreover, Videras, Owen, Conover, and Wu, (2012) define environmental knowledge as the amount of information individuals have concerning environmental issues and their ability to understand as well as evaluate their impact on the environment.

Environmental knowledge is generally taken to be a precursor of environmental feelings. To be precise, it has been established that the acquisition of adequate knowledge about the environment helps a lot in developing a favourable and sustainable environmental behaviour (Fafioye and John Dewole, 2013). In their study on assessment of waste management problems in Ibadan South West Local Government Area, they discovered that the inadequate knowledge of the inhabitants on safe and hygienic waste handling and management led to their poor attitude and practices toward keeping and maintenance of hygienic environment. Most of the environmental problems that society faces today are caused by ignorance (Ajiboye and Ajitoni, 2008; Ajitoni, 2005; Okebukola, 2001). Many ignorantly involve in environmental activities which are inimical to the environment. It is strongly believed that people who are very much aware of the consequences of certain environmental activities try as much as possible not to involve in such activities. They tend to relate with the environment in a sustainable manner. This perhaps explains the reason why countries with high illiteracy rate have higher manifestation of environmental challenges and the effects greatly felt than their counterparts with low level of illiteracy. Education thus has a role to play in improving people's literacy level as regards their environment by making available relevant and adequate information which leads to healthy relationship between them and the environment.

On the strength of the foregoing, Environmental Education (EE) gained international recognition in the 1972 UN conference on the Human Environment in Stockholm, Sweden. Opinions differ in respect of whom to offer environmental education children or adults. Mickisson (2002) suggests working with children and

young adults. In her studies, she found that young minds were able to learn complex things about societal, ecological and biological systems. Vanghan, Gack, Solorano and Ray quoted by Ajitoni (2005) observe that children learn and retain conservation principles in school environments and transfer them to their parents. Hence, children are the target respondents in this study as it is hoped that perhaps their participation in environmental conservation club activities in school may improve their environmental knowledge and this knowledge transferred to their parents, relatives, friends and community at large.

(B) The concept of environmental attitude

Attitude refers to one's feeling, thought and predisposition to behave in a particular manner towards certain things (living and non-living) or issues. It is best expressed when individual acts or makes statement about his/her feelings to certain objects or issues. This means that one's feelings are generated from one's cognition or knowledge obtained directly or indirectly about such a thing or issue.

Attitude can be defined as one's intellectual disposition to put up an action. It manifests when one assesses a specific thing or being with some level of likes or dislikes (Ajiboye, Adu, and Amosun, 2005). Attitude has a great impact on an individual. It serves as a catalyst and motivator in achieving a goal. It may be in positive or negative form. This means that one's attitude towards a thing or issue may either be good or bad depending on one's belief about such a thing. It is pertinent to add that a change in one's belief can also lead to a change in one's attitude to such a thing. Moreso, attitude becomes stronger as one's belief about a particular thing becomes strengthened. Generally, individuals have attitudes that focus on objects, people, institutions, or even nature.

Oyewale (2015) therefore defines environmental attitude as a learned predisposition to respond in a consistently favourable or unfavourable way as regards the environment. Environmental attitude has to do with feelings which are shown by assessing the nature with some level of likes or dislikes (Barr, 2007). Seok (2014) also sees environmental attitude as the beliefs of people and society regarding nature, ecology and other issues relating with the environment.

Audu (1993) reports that relationship exists between knowledge of the environment and attitude to environment. This suggests that a person's level of knowledge on the environment determines the degree of care or damage to the environment. Environmental attitudes are important because they often determine

behaviour that either increases or decreases environmental quality (Robert and Reuven, 2012). Environmental knowledge has been found to be a rather reliable predictor of environmental behaviour and hence can be said to be a strong determinant of environmental attitudes (Ebreo and Vining, 2000). They are formed within an individual and can be measured through different attitudinal measuring scales.

As opined by Joseph (2006) formation of responsible environmental attitude in the young ones is very germane as this greatly determines their feelings towards the environment. This they transfer into environmental care and protection which go a long way in preventing or solving in-coming environmental challenges. When children form responsible environmental attitude, they directly and indirectly influence the environmental attitude of their parents and other significant adults in the community (Sridhar, 2012; Sharbbier, 2006 Gallagher; Wheeler, McDonough and Namfa 2000). Not only this, children of today are adults of tomorrow. Hence, if favourable environmental attitude is formed in them at tender age, they grow up with it to become responsible environmental citizens who will also inculcate this feeling in their children.

Based on this observation, school-based environmental programmes which can help in the formation and development of responsible environmental attitude in the students are highly needed. School clubs such as Environmental Conservation Club (ECC) might serve this purpose.

(C) The concept of environmental practices

Whether one realises it or not, every single thing one does impacts (positively or negatively) the environment. Environmental practices therefore, are the various actions and behaviours of individuals to the environment. The sustainability of environment largely depends on good environmental practices (Murdoch, 2012). This has to do with the application of the most appropriate environmental control measures and behaviours which help in protecting the planet humans live in.

According to Michigan (2007), here are some positive environmental practices:

1. Avoid or minimise the use of canned foods and drinks and disposable plastics: plastics used once before they are thrown away. Examples of such are plastic plates, bags, water bottles, straws, among others. This practice helps to reduce or do away with further production of plastics and cans, and reduces garbage disposed in landfills and oceans.

2. Procure goods that are recyclable and reusable, used goods such as cardboard, paper, plastic, aluminium and glass can be turned into another useful products. Recycling helps in reducing quantity of trash in garbage dumps.
3. Reduce auto discharge with regular auto maintenance, car pooling and opt for public transportation when possible. Block all fuel and oil leaks in your vehicles and motor cycles. Leaking automobile fluids can wash off roads, driveways, and parking lots into creeks, streams and rivers during rain showers. Used automobile oil can still be recycled.
4. The grasses and leaves cut from a bushy garden or yard should not be dumped in drainages, waterways or lakes as these not only block the flow of water but serve as threat to aquatic lives as a result of the contamination of water bodies. Instead, such grasses and leaves should be raked together in the garden to form a compost pile as this serves as soil nutrients for the luxuriant growth of vegetable and flower gardens. Avoid burning of grasses as this not only pollute the air, but destroys the nutrients in the soil.
5. All harmful household products or chemicals that are no more useful should be disposed of at the approved waste dump sites. Disposing such products on the ground, in drains or streams directly pollutes water and soil.
6. Arrange with refuse collectors to be helping in picking refuse used at home, school, office, etc. to government's approved dumpsites. Adequate toilet facilities should be provided to discourage open defecation practices.
7. When printing, print at both sides of the paper to reduce quantity of paper used. If possible, send information through mails to avoid the usage of paper and keep all waste papers for recycling.
8. Endeavour to plant trees and flowers in open places in the home, school and office surroundings. Trees serve as wind breakers and oxygen producers while flowers add to the aesthetic values of the environment.
9. Avoid or minimise the use of insecticides, herbicides and pesticides, as well as other grass and garden chemicals and if to use at all, always adhere strictly to instructions. Never increase the recommended amount to avoid the extra products washing into rivers and polluting groundwater.
10. Reuse plastic take away containers and bottles for storing other products. For instance, empty candy sweet plastic container can be used to store maggi cubes,

granulated sugar, salt, etc. Reused containers and bottles should be properly labelled.

A good habit is not established by a single action (Gbadamosi, 2015). Hence, parents and other older ones in the society must set continuous examples of good actions (practices) in the environment for the young ones to emulate as younger ones who are seen as future decision-makers represent the long term hope for the transmission of favourable environmental practices.

2.2.9 Cultural practices and the environment

Culture as a term is derived from the German word Kultur, meaning civilization. Just like any other social concepts, the concept of culture has been defined in different ways. Thus several definitions reflect different assumptions about human evolution and foci of interests. Perry (1979) takes culture to include “an accumulated knowledge, ideas, values, goals and material objects of society that are shared by all the society members and that have been transferred from generations by individual members”. Culture is an integral part of every society. To Crowder (1986), culture is seen as the “mass of learned and transmitted motor reactions, habit, techniques, ideas and values, and the behaviour they include”.

Culture remains one important factor that shapes, influences and impacts individual behaviour through customized sets of attitude, belief and values shared by a large population of a particular region. It is something that a person learns from his family and surroundings, and is not ingrained in him from birth.

Broadly, culture could be categorized into two; the material and non-material aspects. Material culture consists of the objects such as arts and artifacts, man-made objects which people have learnt to make e.g. cutlass, hoes, arts, etc. and used to satisfy their needs in the society. Non-material aspects of culture consists of the knowledge, philosophy, morals, language, attitudes, etc. shared and transmitted in the society. They are neither visible nor tangible but they manifest through the behaviour of people.

Though culture is known to be very broad, nevertheless, there are some of its elements that have direct implications for teaching and learning. Gay (2002), Perso (2012) and Azubuiké (2013) identify some of the elements which the school could draw from culture to include: cultural values – traditions, histories, religion, beliefs, taboos, customs, occupations, skills, arts, and other attributes which are transmitted from generation to generation.

Azewu (1983) opines that culture is organic and supra-organic. The realization of the fact that culture cannot exist in the absence of human beings makes it to be organic while the continued existence of culture even after the termination of someone's life makes it supra-organic. Many people have come and gone, but culture continues to live. Culture is also material and non-material. It is material in the sense that cultural things like relics, houses, clothes, drums, food, etc. can be seen physically. The non-physical aspect of culture such as music, folktales, morals, religion, norms, among others form non-material culture.

Moreover, culture is explicit and implicit. It is explicit when explanation can be given as regards the display of certain actions by those involved in such actions. It is implicit when certain things done by the people cannot be explained even by the doers of such practices, yet, they strongly believe in such practices. Moreso, culture is ideal when it describes the way and manner in which people are supposed to behave while manifest culture has to do with those things people do and that are recognised by other people that is, certain practices or things which each cultural group is known for. Culture is an omnibus concept which means a variety of things to different people depending on the context it is used. Culture has both colloquial as well as scientific connotations. To say that someone has or does not have good manners or behaviour is an attempt at describing culture colloquially (Oladiti, 2012).

Colloquial culture therefore refers to a kind of habit or lifestyle which is formed and displayed by a certain group of people (peer group, tribal or social group). Such a way of life is thus transferred from a particular generation to the next generation. (www.dictionary.com/browse/culture). By extension, it is a sort of cumulative culture created by people and collectively passed down from one generation of urban people (children inclusive) to the next.

To Iyamu (1994) culture consists of pattern and product of learned behaviour, the manners, habits, language, religion, food, moral beliefs, systems of knowledge, attitudes and values together with the material things and work of arts produced by a group of people. Kluckhohn (1975) sees culture as that part of the environment that is made by man. Paulley (2012) also describes culture as part of the environment that is made and shared by human beings as members of a society.

From all indications, culture pervades all aspects of human existence. This usually manifests in both the material and non-material aspects of culture. It is said to be learned and shared, ideal and manifests, overtly and covertly, it is complex and

dynamic, it is not static but continuous or stable (Pogoson, 2008; Otite and Ogionwo, 1981). It is a design of living in a particular society, and it is known through its practices by the people. It is imperative to note it here that different societies with different people have different cultures hence, there are different cultural practices in the world. Cultural practices can be described as the display of certain habits, behaviour, and activities which have been formed over a long period of time by an ethnic group and which are used to identify such a group of people in the society. These behaviours/activities differentiate between the people of one society/region from the other.

Array of activities which are religious and spiritual in nature, artistic work, medical and welfare services, norms, food and its preparation, forms of relationship among people, formation of knowledge as regards natural phenomena and practices towards nature, among others, are examples of cultural practices among people. Cultural practices constitute number of activities that are being carried out by individual, community, and society under the auspices of culture (Oladiti, 2012). These practices cover many aspects of daily life and influence behaviours of individuals and different societies towards the environment.

Cultural practices also influence how populations affect the environment. They shape the way people see the world. For instance, differences in knowledge and attitude of ethnic groups towards environmental issues such as forestry, wildlife, sanitation, conservation, to mention but a few, will not only influence their practices but also, the reception or rejection of environmental policy(ies) as regards such environmental issue because people's compliance to environmental intervention programmes largely depend on societal values. Values orientations thus, are the main determinants of the development of and differences in environmental engagement across cultures (Ahmed; Decamprieu and Hope, 1981). Attitudes have been recognized as important precursors of environmental behaviour, and an attitude may be defined as a learned disposition to behave in a consistently favourable or unfavourable way with respect to a given object or issue (Schiffman and Kanuk, 2000).

2.2.10 Religious beliefs and the environment

The beginning of life is commonly assumed to have originated from God who made all things, human being inclusive. Following the creation of human being, he seemed to have established religion which connected him to his creator (Abioye, 2014).

All societies have had some forms of religion. Religion is not only found everywhere but also goes back to earliest time.

Durkehim (1969) defines a religion as an integrated belief systems and practices in relation with the mystical and consecrated things which bring people together as one moral entity. Religion as a cultural institution serves as a tool for the actualization of one's needs. On this basis, Omoregbe (2000) defines religion as an institution consisting of culturally patterned interaction with culturally postulated super-human beings.

On a general note, religion can be described as a belief system that has to do with a person's position on the earth, relationship with it and justification for living within it. It is seen as a system of belief(s) that guides social actions, and such beliefs are supported by a community. Thus, religion determines one's religious belief. Everybody is committed to an array of beliefs, attitudes, or views. People who share the same views strongly hold unto and institutionalize such ideas among themselves. Stronger and convincing ideas become a widely acceptable system of belief and philosophy guiding members' actions and interpretations of the world (Tiamiyu, 2014).

Beliefs according to Tiamiyu refer to those propositions, perceptions, creeds, tenets, etc. which an individual or a group holds to be true. All sets of belief held by an individual or a group therefore constitute "belief system" while all the people holding the same belief form a moral or normative community. Hence, specific ideas and beliefs may contradict other sets of beliefs.

From the foregoing, it could be said that religion determines one's religious belief-system. According to Gottlieb (2006), religion is a strong influential factor shaping ideas, feelings, and actions as regards the world. It determines the attitudes and practices (positively or negatively) of a person, group of persons and communities towards the environment. To him, nature is given spiritual, moral and cultural interpretations and significance through religion and the position of human being in the nature including the way and manner he should relate with the other creatures (non-human) and other natural features (relief and climate) are described. According to history, religion emanated from the idea that nature itself is misery and therefore sacred. Hence, all natural features which are beyond human's comprehension are believed to be sacred and therefore worshipped. In corroboration to this view, Osun sacred grove, Erin Ayonigba sacred fish river, Orole, Olosunta, Idanre sacred hills,

Ado-Awaye suspended lake, Awhum water fall, Ikenga virgin forest, to mention but few are natural features preserved for religious purpose.

Still on the foregoing, Temple Mount which contains dome of rock is a massive plaza of stone in the South-East corner of Jerusalem and it is of religious significance. For Muslims, the rock under the dome is where Prophet Muhammad left earth to visit heaven on a winged horse during his night journey in the 7th century. It is the most sacred site to Judaism, Islam and Christianity. Furthermore, the stone of Anointing (where Jesus was anointed before burial), the hill where Jesus was crucified, Angel stone (the round stone used to close Jesus tomb), Mount Olives (place where Jesus was last seen praying), Garden of Eden and Garden of Gethsemane among others are all natural features believed to be sacred and as a result, preserved for religious purposes (Karsten, 2015). Anything which one believes to be sacred or has spiritual power is mostly respected and sheltered (National Institute of Environmental Health Sciences (NIEHS), 2013).

2.2.11 Home location and the environment

A home is a place where a person, members of a family, or many families in a particular ethnic group live (Terkenli, 1995). It can be a temporary or permanent one. It is usually a place in which individuals or a family can rest and keep their properties. Home can be defined as a geographical area (whether it be a suburb, town or city) in which a person grows up or feels he belongs (Durojaiye, 2015). Home as a term connotes different kinds of residential or community institutions in which certain sets of individuals reside, for instance, disabled home, orphanage home, nursing home, etc. For this study, a home constitutes parents (father and mother), siblings (children), relations and other significant others.

Location according to Random Chambers Webster's College Dictionary (2010) refers to: a specific position or point in physical space; a place or situation occupied or a place of settlement, activity or residence. A location as regards this study refers to surrounding (environment) where the learner's home is situated or the place where the learner resides or lives.

Home location therefore in the context of this study refers to the particular geographical area where parents, siblings, relations and other significant others (family) live. The family though, smallest unit in the society, is very germane in giving a child his/her identity. It lays the foundation that other social institutions build on. Family

lives in a home located either in a planned residential area or unplanned residential area. Specifically, this study tends to examine the different residential areas (planned and unplanned) in Ibadan metropolis where students' homes are located and how these areas influence (positively or negatively) their knowledge on, attitude to and practices in environment.

In the year 1829, Ibadan became a settling place for Oyo, Ife and Ijebu warriors. In essence, Ibadan started as a war camp and was like that till the end of the 19th century (Fourchard, 2003). Five local government areas were enumerated in Ibadan metropolis. It has the landmass of 524.25km representing 14.83% of the total land area of Oyo State. The natural increase and the influx of migrants into the metropolitan city leading to continued increase of its population have serious effects on its infrastructural facilities and building layout (Ipingbemi, 2010). Hence, the metropolis is characterized by both planned and unplanned areas.

The planned areas are largely dominated by upper and middle classes of people. The area is characterised by good layouts, quality sanitation utilities, good road network and high cost houses. The unplanned or core areas are inhabited by early settlers, that is, indigenes. Lower class of people mainly lives in unplanned areas characterised by poor layout, poor or no identifiable sanitation facilities, narrow and inaccessible roads, low cost houses and possibly mud houses (Olayiwola, 2006). The unplanned or core areas usually have large population (high density areas). Areas like Opo, Ayeye, Foko, Oritamerin, Oje, Beere, among others are good examples of unplanned areas (Fabiya, 2006). Most of the homes in these core areas are without conveniences (toilets and bathrooms) not to talk of refuse drums for disposal by refuse collectors weekly or fortnightly. All dirt including faeces are deposited either inside gutter, delapidated buildings, open lands, or even kept to be poured inside running water if during the raining period.

However, migrants from near and far towns who have come to settle in Ibadan basically for economic reason form the medium density areas (Fabiya, 2006). Many government workers, businessmen/women and others with white collar jobs are found in these areas. Areas like Agbowo, Molete, Apata, Sango, Mokola, Eleyele, Ojoo, Ijokodo, among others, fall within the medium neighbourhood. Majority of workers prefer to live in this neighbourhood because of access to utilities, social services, fairly good road network and availability of public transport. This neighbourhood exhibits some degree of house planning.

The low density neighbourhoods in the city are Agodi, Oluyole, Iyaganku, Jericho, Bodija, Ashi and Government Reserve Areas (GRAs). Top civil servants, business tycoons, politicians, among others, live in low density areas. This neighbourhood exhibits high degree of planning (good layout and wide compound) with access to high quality utilities and good road networks (Oduwaye, 2011).

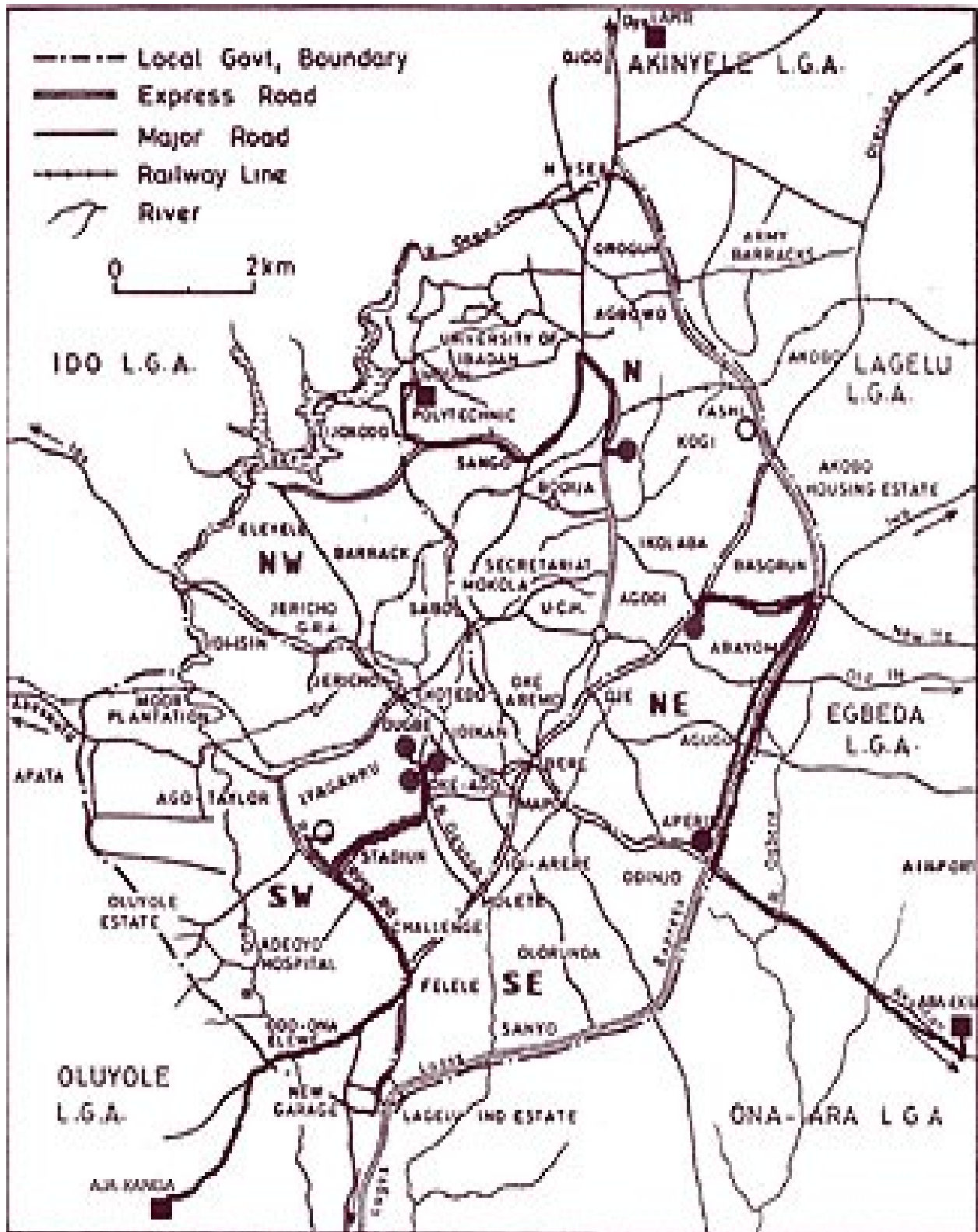


Figure 2.3: Map of Ibadan showing the wards in the surveyed zones
 (Adapted from Coker, A. O.; Awokola, O. S. Olomolaiye, P.O. and Booth, C. A. 2007)

2.2.12 Gender roles and the environment

Every human society (traditional or modern) expects certain responsibilities from her members. These members are of two sexes - males and females. Sex is the biological and anatomical characteristics distinguishing male and female organisms (Lott, 1994). Though, the differences in biological features between male and female human beings are very vital in determining each of the sexes roles, but in social term, the society determines most of the roles to be performed on the basis of gender. Hence, gender is a social and cultural construct differentiating between male and female in the context of beliefs, traditions and practices connected to masculinity and femininity (Lober, 2004).

In each culture, expected roles and responsibilities of men and women differ. Really, sociocultural factors define gender differences to a great extent. In line with this view, Zelezny, Chua and Aldrich (2000) observe that most cultures socialize their young ones along side the gender and expected roles from such a gender - girls are trained to stay indoor helping their mothers in carrying out domestic chores (keeping both home and its environment clean) while it is not compulsory for boys to stay at home. The implication of this is that sociocultural process is germane in describing what males and females are to do based on their gender and how they are to relate with each other. Though, gender difference is a human invention in the society, but it helps a lot in shaping social environmental roles in daily life. This thus, forms the basis of gender role differentiation. The role differentiation system translates into specification of roles along gender line.

Gender role is a set of societal standards determining what kind of behaviours are commonly taken to be up to standard, cherished or suitable for a person based on his/her real or supposed sex. Similarly, gender roles can be described as those culturally constructed behaviours and activities that a given society considers appropriate for men and women. Traditionally, men were the owners and controllers of the means of production most especially land and its resources while women were expected to be the managers of these resources – took proper care of the resources for the benefit of the family, cleaned rooms and home environment, did laundry and also took care of the family members.

Through out the world, gender stratification and gender roles exist. Nigerian society is not an exception of this as gender role differentiation is a general characteristic among all tribal groups in the country. In all her ethnic and cultural

characteristics, Nigeria has a sharp categorization of her members into sex and gender (Ogege, 2011). By gender role, females spend more time at home and its immediate vicinity than their male counterpart. Generally, women are mostly found at home and in the community while men are often far from home or even the community searching for greener pasture. With this, women naturally become caretakers of the natural environment and make sure that the environmental resources are adequately and sustainably allocated within the family unit and the community (Mwangola, 2005). Hence, women as chief home managers, primary harvesters and users of natural resources have a close connection with their local environment (Wahab, 2014). Environmental attitudes and behaviours, as well as knowledge have frequently been related to gender (Hunter, Hatch and Johnson, 2004; Elsier and Yoshida, 2003; Zelezny, Chua and Aldrich, 2000).

2.2.13 Participation in school-based environmental conservation club activities and environment

A. Environmental conservation club

Environmental Conservation Clubs in Nigeria which started in 1990 with seven primary schools in Lagos state as pilot schools have grown today as the “mustard seed”. Many schools across Nigeria have formed and registered their environmental conservation clubs with FEPA (FEPA, 2012). The increasing nature of the country’s environmental problems coupled with her decreasing natural resources especially oil suggest the urgent need for conservation practices among her citizenry. According to the Teachers’ Guide to conservation club (2014) the country needs to practice conservation for the following reasons:

- i. To reduce the growing environmental problems, e.g reduce deforestation by planting trees
- ii. To reduce or eliminate wastage of all resources by recycling all materials that can be re-used
- iii. To ensure the continuing availability of natural resources for future generation; and
- iv. To avoid the mistakes of non-sustainable development of other nations, for example the effects of chemical waste on the aquatic habitat, as happened in Japan, USA, the former USSR, etc.

Students are regarded as change agents and future leaders, who are in a better position to sensitize members of their families on the need to avoid depleting resources of their environment.

Nigerian Conservation Foundation took the environmental conservation campaign to schools by launching conservation clubs in several secondary schools across the country. The main aims for organizing school conservation clubs according to Sam-Egwu (1997) include:

- i. To have adequate knowledge of the importance of natural resources in the environment and the reason(s) why they should be used sustainably.
- ii. To make members aware of the great economic and aesthetic values of natural resources, and
- iii. To spread information and knowledge about wildlife and the environment to members of the community.

For schools' conservation clubs to achieve the goal of conservation in their various schools and communities, the following essential phases must be recognized namely, conservation awareness, natural resources use and environmental management and conservation decision making (Teacher' Guide to conservation, 2014).

The first phase expects a teacher to play the role of learning facilitator by the following significant ways:

- i. Starting from the pupils/students their varying environmental perceptions understanding, interests and needs.
- ii. Encourage students to express opinions they have about their local environment
- iii. The teacher should develop attitude of caring, sharing, accepting responsibility and respecting the right of people, plant and animals, and
- iv. The teacher should educate pupils or students on the values of conservation by exploring reasons for their likes and dislikes as well as what they think is right or wrong with their environment.

Accordingly, the above measures will bring about the following result in the pupils/students:

- i. The pupils/students will develop an awareness, an appreciation and a concern for the natural and manmade resources in their immediate environment.
- ii. The pupils/students will acquire knowledge, and skills on the components that comprise the natural and man-made environment.

- iii. The pupils/students will gain knowledge about the basic environmental concepts that affect man, including the conservation of natural resources.
- iv. The pupils/students will be able to think critically and make valued judgment about man's impact on the environment.

However, students/pupils must be groomed through the following steps:

- i. "Sensing" the environment, and enabling students to explore their responses/feelings about it. Allow children to learn from the environment, as this will provide the enthusiasm and impact necessary for retention and values clarification. The endless variety of objects and situations in the local environment provide an excellent opportunity for both teachers and pupils to learn from the environment together;
- ii. Understanding the environment: pupils may need help (and so many teachers) from a wide range of specialists: conservationists, scientists, geologists, etc. to understand the inter-relationship between human beings and environment;
- iii. Asking questions about what should be in relation to environmental conservation, management, sustainability and other environmental related issues.

After the formation of the club, the NCF provides admission form and membership cards for members, NCF Logo and also supplies club constitution to the school and provide technical assistance to ensure the growth of the club.

The roles of club members include:

- i. Interaction among members and with members of other clubs through debates, quiz and performance competition
- ii. Conservation crusade with a view to detecting environmental eye-sore to which they can call government to do something:
- iii. Exhibitions /Talks/ Film shows: By organizing exhibitions, invite guest speakers to give talks on environmental issues and organise film shows on environment for club members and friends,
- iv. Producing club magazines;
- v. Visits to zoo, conservation centres, small bushes, a garden to study nature and other natural environmental phenomena
- vi. Study and apply the ideas from newspaper articles on conservation and the environment and

- vii. Apply the conceptual bases of environmental conservation to learning activities (The Teachers' Guide, 2014).

Consequently, for the development of purposeful and meaningful environmental conservation activities which can lead to environmental awareness, knowledge, skill and action, the following must be in place namely domains of activities, the use of outdoor and field experiences, the use of community resources, the use of simulation gaming, case studies and projects (The Teachers' Guide, 2014).

The then General Manager, Ebonyi State Environmental Protection Agency, Okorie in one of his sensitization meetings pointed out the following reasons why we conserve the environment:

- i. to protect the surface and ground water from pollution;
- ii. to ensure that the air we breathe is free from pollution;
- iii. to protect certain species of fauna and flora from going extinct and in the case of the soil to:
 - protect it from all forms of degradation especially erosion, flooding and landside.
 - To maintain the nutrient status at such level to sustain crop production.
 - To maintain a good soil structure.
 - To enhance the activities of soil micro-organisms that are vital in soil formation and maintenance.
 - To reduce the farmers dependency on application of in-organic fertilizer.

He went further to enumerate the various ways through which the environment can be abused:

- (i) Indiscriminate tree felling and over logging exploitation;
- (ii) Rampant removal of soil vegetable cover and the use of concrete for paving works;
- (iii) Uncontrolled hunting;
- (iv) Use of obnoxious fishing methods;
- (iv) Bush burning: Over use of lands;
- (v) Wrong choice of crops and
- (vi) Excessive application of inorganic fertilizer to the soil and indiscriminate use of pesticides and other dangerous chemicals.

A senior Environmental Scientist, Federal Environmental Protection Agency (FEPA), Gidad identified global warming, ozone layers depletion, biodiversity, soil

pollution, water pollution, atmospheric pollution and thermal pollution as some of the effects of environmental abuse while the attribute diseases such as cholera, typhoid, asthma and others are as a result of polluted environment.

B. Youth Environmental Scout (YES)

Youth Environmental Scout (YES) club is an initiative under the Environmental Health Students' Association, Faculty of Public Health, University of Ibadan, Ibadan. It started in 1995 by the present course coordinator of the Department of Environmental Health Sciences, Dr. Ana. The initiative that has now become a requirement for the award of the M.PH degree in the Department is to create environmental awareness in primary and secondary schools in Ibadan. The club is a voluntary, non-profit and self-sustaining club geared towards the sustenance of sound environmental health practices. Over the years, facilitators have always been rounding-off their activities by carrying out an environmental assessment of their schools and mini interventions to meet part of the environmental needs of their schools.

The vision of the Department is to be of international standard in producing high level manpower in the fields of environmental science and health related issues, and to provide expertise services locally and globally. One of her mission statement is to nurture young ones in environmental health ethics and practices towards attaining environmental sustainability and sustainable development.

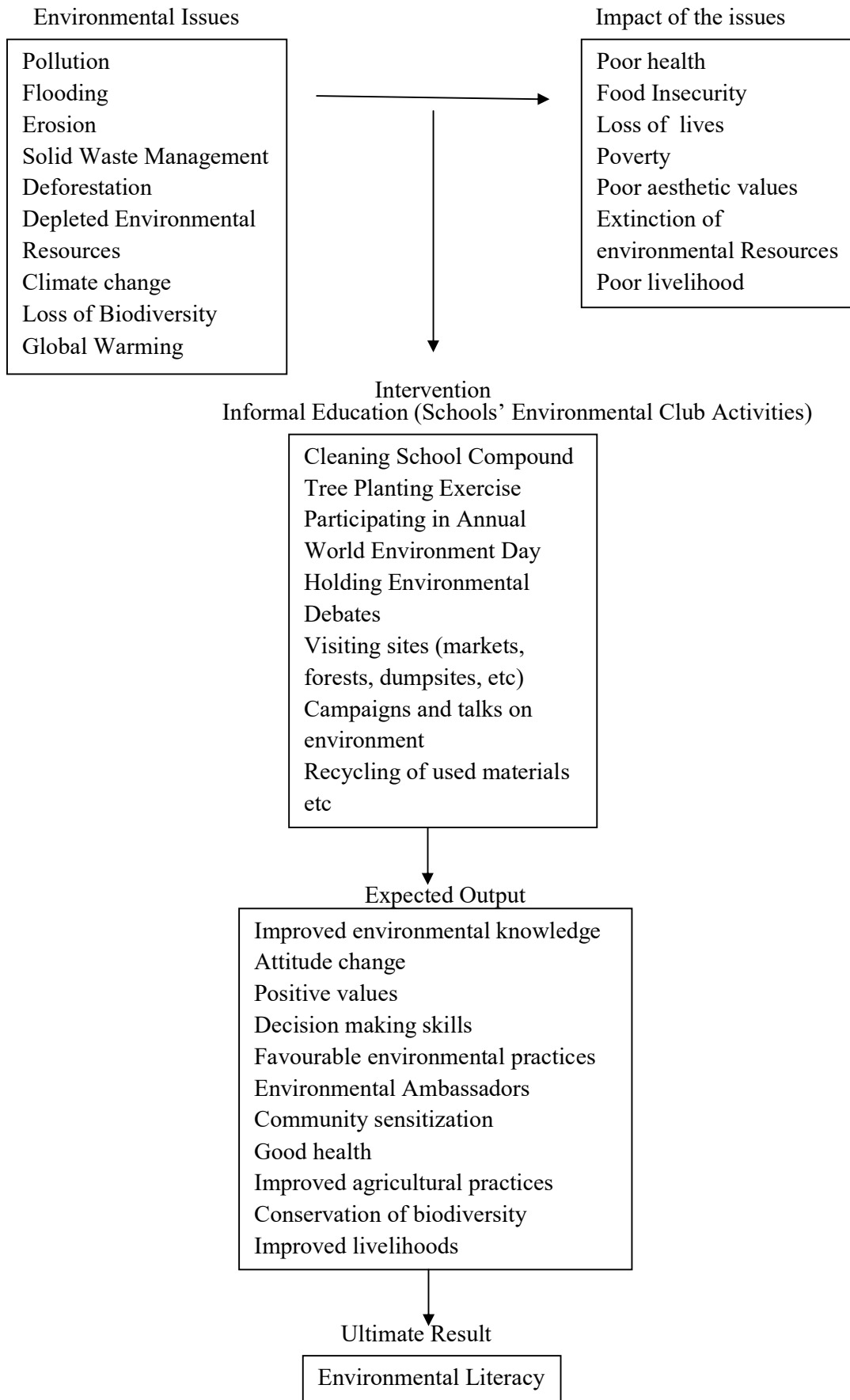


Fig.2.4:Schools' Environmental Conservation Club Framework (Adapted from Gathuku (2012:11))

This framework brings out the understanding that the schools' environmental conservation clubs are based on problem or issue identification and provision of solutions through hands-on step by step conservation activities. The first two boxes present the environmental set-up and impact of the issues, this is followed by possible intervention which includes holding environmental debates, cleaning school compound, planting trees, campaigns and talks on environment, participating in annual World Environment Day symposia, recycling of used materials, among others.

The expected outputs of these activities are learners' improved environmental knowledge, attitudes and behaviour. This results to giving sustainable solutions toward the outlined issues that culminate to the realisation of environmental literacy in learners.

2.2.14 Environmental literacy and characteristics of environmentally literate person

(i) The concept of environmental literacy

Environmental education is entrenched in the idea that qualitative life and qualitative environment are interconnected. This means there is a reciprocal relationship between human being and environment. As individuals largely determine the fate of the environment, so also environment mostly determine the fate of individuals living in it. Hence, to improve individual's quality of life, quality of the environment must be ensured by humans (Wisconsin Department of Public Instruction, (1991). According to Disinger and Roth (1992) the production of an environmentally literate citizenry is the major target of environmental education. They further noted "environmental literacy as a requirement to maintain and enhance environmental quality". Therefore, the need for a "citizen that is capable of taking actions on serious environmental matters is very germane" (Volk, Hungerford and Tomera, 1984). To be able to leave behind a legacy which the present generation will confidently transfer to the incoming generations, it is important for educators to assist the present generation to be fully aware of their environment – understanding how the environment works, how people relate with it, and how environmental matters and challenges come up and how these can be addressed. Therefore, environmental literacy needs to be a major focus of any general education programme (Roth, 1992). This is because environmental literacy is germane for citizens to take actions which would enhance the value of their lives and the value of the environment they live in.

The inability of the people to actively participate in environmental matters led to the development of environmental literacy. Environmental literacy has to do with the application of the knowledge gotten about the environment to solve practical environmental problems. With this, environmental literacy was added to the concept of environmental education hence, the meaning of environmental education expanded. What then is environmental literacy?

According to Roth (1992) environmental literacy is essentially the “ability to study the relative wellbeing of an ecosystem and take suitable actions to sustain, reinstate, or develop the wellbeing of those systems”. An environmentally literate person must have adequate knowledge of a particular environmental problem he or she wants to solve for such a problem to have a permanent or lasting solution. He reiterated further that stewardship of the environment calls for acquisition of adequate knowledge, formation of desirable attitudes and the display of favourable skills which are all rooted on the commitment to improve the environment in which we live through active participation. Each step an individual takes has a great implication on the whole global environmental system. The societal developmental sustainability is largely based on the level at which people are environmentally literate.

The test of environmental literacy is the level at which a person is able to relate successfully with his environment on daily basis and his broad understanding of how people relate with the ecosystem sustainably. To be environmentally literate, there is need for adequate environmental sensitivity, fact, ideas, attitudes, and skills to be able to consider environment in one’s everyday thought and decisions as regards ways of living, eating habit, occupation and to involve in personal and group actions. Environmental literacy leads to behavioural changes that are personal and lifelong.

(ii) Levels of environmental literacy

As it is an overstatement to say that a person is completely literate so also, it would be an understatement to say that a person is illiterate about environmental matters. That is, environmental literacy has a broad range, from shallow awareness to deep, thorough understanding, concern and action. Hence, the necessity to distinguish among the levels of environmental literacy. The levels of environmental literacy can be determined by visible behaviours (Roth, 1992). According to him, environmental literacy is a continuum of capabilities starting from low capability to very high capability that can be purposely split into three levels: nominal, functional and operational.

a. Nominal environmental literacy

This means that an individual is conscious of the existence of the environment and has ideas (though, little) about how the environment functions. Individuals at this level continue to improve on his sensitivity as regards the environment together with the formation of better attitude, feelings and concerns for the natural systems and enormity of individual's Influence on them (Disinger and Roth, 1992; Roth, 1992). Nominal environmental literacy therefore has to do with being aware and understanding the whole environment.

b. Functional environmental literacy

This level is an improvement on the previous level of environmental literacy. With this level, an individual has a wider knowledge leading to more understanding of the interconnection between the social systems and natural systems. The negative impacts of the interaction between these systems are noticed by individual and the skills to gather, analyse and evaluate information based on issue(s) at hand using both primary and secondary sources are developed by the individual. A selected problem is evaluated based on facts from research, personal values and ethics. The findings of his investigations are made known to others (Disinger and Roth, 1992). Functional environmental literacy implies application of one's environmental knowledge to solve a particular environmental problem through a scientific procedure and ethical values.

c. Operational environmental literacy

This is an advanced stage of environmental literacy. Here, an operational,environmentally literate person takes or involves in actions that improve and sustain a healthy environment. People at this level take up the responsibility of preventing environmental hazards and are also ready to provide lasting solution to the unavoidable ones individually and collectively. They are concerned not only on local environmental issues but global ones as well (Disinger and Roth, 1992). To an operational environmentally literate person, environment is given due consideration in his daily activities. He is always mindful of the cost of every environmental actions he takes.

The culture, socio-economic status, and level of education of an individual(s) or society as a whole largely determine their environmental literacy level.

(iii) Components of environmental literacy

The environmental literacy ladder outlines five important components of environmental literacy. The ladder is in an hierarchical form that is, from the bottom to

the top, each step building on another step above. However, in practical life, the steps overlap. It is imperative to say it here that environmental literacy is not achieved with the realization of one of the steps, but can be achieved when all the steps take place in a person. This however, differentiates environmental literacy from environmental education.

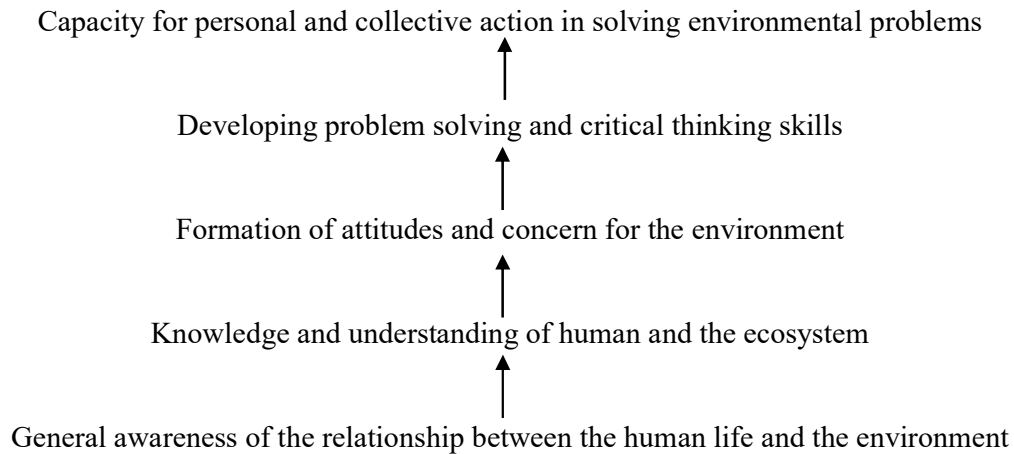


Fig. 2.5: Environmental Literacy Ladder

Source: Adapted from Charuvil (2000: 67)

(iv) Characteristics of environmentally literate person

It has been observed that the choice of personal and collective life styles of people resulted in the degradation of environmental quality and danger to the continued existence of humans and other living beings. This therefore calls for advancement in the degree of environmental literacy as it helps people to understand the relationships between them and the environment and how to develop crucial skills and ethics with which they can relate with the environment in a manner that would not affect it negatively. It is imperative to state it here that sustainable development relies on the level of environmental literacy of each person in the society.

While feelings for the environment have steadily increased over the past 40 years, there has been slight basic change in human behaviours as evident in the display of unfavourable environmental actions which affect the relative health of the global ecosystem (Murdoch, 2012). Environmentally literate citizens therefore, are individuals who adopt lifestyles, behaviours and consumer choices that reflect an understanding of how these choices affect the health of the planet. Environmentally literate individuals have some distinctive abilities:

1. Ability to think in terms of systems.

An ability to analyse and understand our actions in terms of how they affect the life and systems of the planet characterises environmental literacy.

2. Ability to think ahead.

The ability to consider the long term consequences of behaviours and actions; to extend beyond the quick solutions into actions but actions that are truly long term and sustainable, characterises environmental literacy.

3. Ability to think critically about issues which involve personal values and beliefs

The ability to evaluate all aspects of an issue objectively regardless one's values and beliefs characterises environmental literacy.

4. Ability to move from awareness to understanding to positive action

The ability to change awareness into positive actions and issues resolution, lead to greater knowledge and understanding.

5. Ability to convert reality to the relative health of ecosystem

The ability to convert the reality of the natural world to the reality of the relative health of the planet characterises environmental literacy.

6. Ability to learn new concepts and unlearn old ones

One of the characteristics of an environmentally literate person is the possibility of coming about new environmental concepts and dropping old concepts especially those which are no more relevant to the present environmental situation and social lifestyles of people. As a lifelong learner, he learns about the new environmental concepts and applies them to solve the present ecological challenges.

7. Ability to communicate

An environmentally literate person sequentially clarifies and presents his environmental thoughts and ideas in a convincing way in order to justify his thoughts, ideas and actions.

8. Ability to value the aesthetic as well as the conceptual

Environmentally literate persons not only study and learn about the environment but also identify and appreciate the aesthetic values of the earth and include these in their decision making processes.

9. Ability to make a long-term commitment to work cooperatively on issues of concern

Environmental problem has no boundary. It cuts across many areas and involves many people. Therefore, no single person has the ability to provide lasting solution to a particular hazard. Hence, concerted efforts and commitment are needed to identify and proffer long lasting solution to earth challenges.

10. Ability to critically evaluate the effects of change before influencing change

Change is unavoidable. It is bound to happen in any society (simple or complex, traditional or modern), but the ability to cross examine the effects (positive or negative) of a particular change prior its implementation makes an environmentally literate person. A change that is hazardous to the health of the environment is discouraged.

11. Ability to offer direction that supports meaningful change

The ability to display personal conviction and commitment to ecological stewardship, in spite of a plethora of media, consumer and social pressures to do otherwise, characterises environmental literacy.

12. Ability to attain a balanced lifestyle that includes quality immersion experiences in the natural world

Many people especially in Nigeria reside in urban areas. The lifestyles of the urbanites most times stand as threat to the environment. Indiscriminate dumping of refuse, uncontrolled use of nylon and plastic bottles, illegal cutting of trees, erecting buildings on water channels river banks, among others, lead to one environmental problem or the other. People who are so much conscious of how their lifestyles impact the environment are environmentally literate citizens.

In order to take suitable measures to secure both qualitative life and environment, the aforesaid characteristics are necessary.

2.3 Empirical literature review

2.3.1 Cultural practices and students' environmental knowledge

It is the strong belief of Vygotsky and others that parents, care givers, peers and others at large have impact on how instruction and learning take place in individuals most especially, the young ones. To them, the roles that participation in culturally organized activities play in influencing achievement in environmental related concepts should not be overlooked. Research has consistently shown that classes are becoming higher heterogeneous. Some students are bright, alert, inquisitive and interested while

others are less interested- or both. There are times when a particular lesson does not fit all the students, because of their socio-cultural differences, many may learn but some will undoubtedly continue to be apathetic and become more spectators (Ajitoni, 2011).

A child's cultural belief and practices as regards a particular environmental issue/topic largely affect (positively or negatively) his learning of that topic no matter the strategies used by a teacher to make learning take place (Schuitz, 2012). A child whose parents' traditional occupation is hunting and herbal healing may not be favourably disposed to the teaching on preservation of fauna (wildlife) and flora (plants). In contrary, a child whose parents believe that other natural creations like trees, rivers, rocks, soil, etc. have lives of their own and hence be treated with respect and care, and he actually sees his parents caring for the nature, such a child will not only become nature friendly but, highly favourably disposed to teaching on nature preservation and protection. Similarly, teaching rock and mineral resources identification may elicit little emotional response from most students. But when the subject matter seems to confront each student's cultural lifestyle then, the topic may be perceived in a different light, leading to differences in academic performances of such students.

Arbuthnot and Lingg (1985) compared the environmental knowledge, attitude and behaviour of the French and Americans cultures. They found the Americans' knowledge about the environment to be more than that of the French. Thus, American's attitudes were discovered to be more pro-ecological than their French counterparts. These findings are attributed to the fact that Americans engage in habitual environmentally-friendly actions while the French are found to be more preoccupied with their personal economic gain or loss when faced with environmental questions. Hence, they involve in activities which are anti-ecological than the Americans.

Eleven years after the findings of Arbuthnot and Lingg (1985), Michael, Roy, Chankon and Thomas (1996) worked on the influence of culture on pro-environmental knowledge, attitudes and behaviour – Canadian perspective. Results indicate that francophones have lower scores on eco-literacy and concern for local environmental issues than Ontario anglophones. The overall F-test was found to be significant ($F = 5.52, P < .01$). The only significant contrast found was that between the French and Ontario samples ($F = 9.926; df = 2/356; P < .05$), thus showing a higher level of eco-literacy on the part of the Ontario respondents.

A cross sectional survey was carried out by Oyemade, Omokhodion, Olawuyi, and Sridhar (2009) to determine the relationship between culturally hygiene practices and environmental knowledge of Ibadan women. Amidst other findings, the educational background coupled with sanitary activities carried out by a group of women helped them to have better environmental knowledge than the other group.

Ebong (2014) in one of his studies assessed the environmental health knowledge and practice of 192 students at Ja'afaru secondary school in Zaria, Nigeria by means of questionnaire. The findings indicated that students with literate parents, adequate opportunities and sanitation facilities at home had higher environmental knowledge than the students with illiterate parents, inadequate opportunities and sanitation facilities at home. The latter students' knowledge of environmental hygiene was low because of lack of sanitation facilities and opportunities to practice sanitary activities at home.

2.3.2 Cultural practices and students' environmental attitudes

Variables which predict environmental concern of people to "green buying" (buying products that are environmentally beneficial) were investigated by Mainieri, Barnett and Valdero (2001) among 201 respondents in 8 middle-class communities in Los Angeles. The predictor variables included specific cultural beliefs of consumers, awareness about environmental impacts of products, economic status and demographic variables of consumers. The results of hierarchical multiple regression analyses supported the hypotheses under study: specific cultural beliefs predicted several green-buying behaviours and attitudes, followed by economic status, awareness about the environmental impacts of products, and demographic variables of consumers respectively.

Moreover, a cross-cultural study on American and Chinese students' environmental attitudes show that there is a significant difference in the environmental attitudes of the two cultural groups with the Chinese group having higher mean score than the American group. Across several studies (Schultz, 2012; Brown, Flavin and French, 2015; Herstgaard, 1999) evidence suggests that people in the United States tend to be less concerned about environmental issues overall than people from most other countries.

In addition, the attitudes that the people in U.S develop tend to be more focused on local issues that are related to the individual, while people in many other countries

(mostly developing countries) tend to develop broader, more biospheric attitudes. These cross-group variances are likely to be attributed to cultural differences and discrepancies in the environmental development of the two nations.

The environment and the people are in close relationship in indigenous African culture. Natural phenomena in the environment cannot just be handled carelessly by the people. In Nigeria for instance, the Yorubas cannot just dig the land regardless the purpose of doing so without the consent of the soil. They are of the belief that the soil is a living being. In corroboration to this view, the Igbos celebrate the mother earth (soil) as they welcome new yam in a ceremony tagged “New Yam Festival”. This is basically done to acknowledge the significance of the outermost layer of the earth for bringing forth food. Still on the foregoing, the indigenes from Ijebu-Ode are forbidden from hitting or beating the land, bushes, trees and grasses aimlessly for they can be annoyed and retaliate when such people are asleep. Likewise, they are discouraged from maltreating rivers, streams and other water bodies (Ogunade, 2007).

It is not an overstatement if it is said that indigeneous culture is a friend of the environment. Faithfuls of traditional culture do embark on tree replanting and conservation plan. Their shrines protect and at the same time reserve nature. Osun grove in Osogbo is a typical example. The culture speaks a lot as regards preservation. It could be deduced from the foregoing that people’s cultural beliefs and practices tend to influence their feelings and concern about the environment.

However, much work has not been done on people’s (students inclusive) cultural practices and their environmental attitudes in Nigeria. Research on environmental attitudes and behaviours across cultures have mostly been carried out by scholars outside Nigeria (Brown, Flavin and French 2015; Whitmarsh, 2011; Schultz, 2012; Dunlap, Gallup and Gallup 1993; Ahmed, deCamprieux and Hope, 1984) and they have not determined the extent to which the variables in this study: cultural practices, religious beliefs, home location, gender role and participation in environmental conservation clubs predict students’ environmental attitude in a combined study as this.

2.3.3 Cultural practices and students’ environmental practices

Nigeria as the most populous country in black Africa (Paulley, 2012) is an heterogeneous or a multi-cultural state. This means that it is made up of many ethnic groups with diverse cultures. What this implies is that Nigeria as a state is blessed with a variety of ethnic groups with varying cultural practices. Cultural practices constitute

number of activities that are being carried out by individual, community and society under the auspices of culture (Oladiti, 2012). Such practices are usually tied to culture and thus, form parts of the daily life of the people. Culture no doubt, is an important aspect of human endeavours. To be able to give rational explanations about human beings in terms of their actions and reactions, there is need to have a firm grip of people's culture (Oladiti, 2012). As such, culture is at the basis of all human actions. As cultures vary so also cultural practices vary across the world and from one ethnic group to another.

Cultural practices influence the knowledge, behaviours and actions of people toward the environment. Cultural practices determine the kind and level of relationship that should exist between the people and the environment. In some areas, the local culture and laws have emphasized environmental protection, while in others this has not been a major concern. For instance, the dense forest of the Osun sacred grove is one of the last remnants of primary high forest in Southern Nigeria (www.nigeriahc.org.uk/culture-tourism). It is also a UNESCO World Heritage site situated along the Osun River. The water of Osun is said to have the power of making barren women fertile. Hence, both are taken to be sacred natural elements forbidden for illegal lumbering and disposal of wastes respectively. Erin Ayonigba sacred fish river in Erinjiyan Ekiti is another sacred river which contains a colony sacred catfish that must never be killed or eaten. If all other "unsacred" catfish are exhausted from "unsacred" rivers, it is believed that Erinjiyan catfish will still be available for sight seeing for future generations.

Orole and olosunta hills both in Ikere-Ekiti, Idanre hill at Ondo State, Obudu Mountain resort at Cross River State, Ado-Away suspended lake, Awhum Waterfall in Enugu State, Oke Ogun National Park in Oyo State, Yankari National Park at Bauchi State, The Ikogosi warm spring situated in a dense forest that extends over a hilly landscape, with tall trees around the confluence and Ikenga virgin forest in Anambra State reported to be the only virgin forest in Nigeria (www.nigeriahc.or.uk/culture-tourism) are other cultural tourist areas which are preserved and conserved by the indigenes. Moreso, cultural tourist areas are well taken care of in terms of beautification which improves the aesthetic values of the environment.

Cultural practices which have to do with the people's traditional ways of life can influence environmental health practices in Nigeria especially, in Ibadan. A study conducted by Oladepo and Sridhar (2012) among large ethnic groups in Nigeria found

that many of the people's traditional practices promoted good environmental and complemented modern environmental promotion efforts. According to them, folklores and songs emphasize sanitary disposal of human waste, general cleanliness and the importance of personal hygiene.

For instance, the songs:

- | | | |
|-----|---------------------------------|--|
| (a) | We ki o mo | Take your bath and be clean |
| | Ge eekanna e | Cut your nails |
| | Jeun to dara lasiko | Eat good food on time |
| | Ma jeun ju | Do not overfeed yourself |
| | | |
| (b) | Imototo lo le segun arun gbogbo | Sanitation can wipe away all diseases |
| | Imototo ile, imototo aso, | Home sanitation, cloth sanitation, |
| | Imototo ounje | Food sanitation, |
| | Imototo lo le segun arun gbogbo | Saniitation can wipe away all diseases |

preach the relevance of environmental and personal hygiene. With these and many other cultural practices in Nigeria, the bio-physical environment is highly protected and its natural features maintained.

Despite the fact that indigenous cultural practices are pro-environment, there are some practices which are not environment friendly. The Igbo people of south-eastern Nigeria for instance have a lot of pride in observing their traditions which have been passed on for generations. However, some of these traditions have been carried out in ways that seem to destroy local flora and fauna. For example, bird (eagle) feathers and elephant tusks are used a lot as part of their regalia. They have also been trading in elephant tusks for centuries. On 6 May 2011, Reuters and BBC reported that over one tone of ivory or 115 elephant tusks were found in metal containers at Nairobi's International Airport in Kenya. The destination was Nigeria. Also, their thirst for or preponderance of traditional titles puts further pressure on the biotic environment. Perhaps, these practices led to the extinction of elephants and eagles on these areas.

The Yoruba in the southern part also use leaves during various rites like the conferment of chieftaincy titles and rarely employ some animal parts for some exotic medical purposes. Animals' skin are also used in making different types of cultural drums. Moreover, the heavy use of the leaves of *Thaumatococcus Danielli*, which is a

natural source of the intensely sweet protein known as thaumatin, for preparing bean cake (moin-moin) and cold pap (eko), preservation of locust beans, and so on is causing the disappearance of the plant. They did not see anything bad in eating wild animals as they take it to be a nutritious menu. Consumption of bush meat is at the high side among them though, in the past few years, it has reduced due to the disappearance of these animals in the bush as a result of pressure on them. Many of these animals are in extinction.

Consumption of wildlife in the north is not as high compared to that of the south probably because the region is largely an Islamic dominated area and the religion prohibits the eating of some wild life by its Faithfuls. Nevertheless, findings on bush meat sales have shown it that aside primate species, other wildlife and a lot of plants are consumed as food and local medicines/drugs in the region. The proliferation of traditional medicine markets and local healing homes are also responsible for the high consumption of wildlife in Nigeria. The present findings on the worldwide disappearance of vultures by Birdlife International is worthy of thought. (National Environmental Standard and Regulations Enforcement Agency (NESREA) 2011). Similarly, some farmers still take to the cultural method (bush burning) when preparing land for new planting season. This practice thus leads to air pollution, destruction of soil nutrients, death of wildlife, among others. Some still, resist the use of fertilizer on their farmlands.

However, in modern times, alterations in the structures and institutions which make up a social system greatly influence people's cultural practices since these practices rely strongly on the wide involvement of participants and other members in the society. Issues like western education, increasing effect of main global religions, migration, urbanization, population explosion, education, and other effects of globalization have a principally noted influence on these practices. On the strength of this, some of those practices which are considered as means of preserving and conserving natural phenomena may now appear strange and even be considered outrageous by the people.

In recent times, a sort of cumulative culture created by people based on their daily living conditions and social lifestyles have been built. The "new" or "sub"-culture is strongest in urban cities where the influx of large population of migrants and the attendant socio-economic problems result in the proliferation of diverse risk within the urban environment (Adelekan, 2016). Practices such as illegal dumping of refuse, open

defecation, indiscriminate cutting of trees, discharge of unwanted biological, chemical and physical materials on land, into water or in air, etc. are some of the socio-cultural practices which deteriorate environmental conditions in cities. Those living in the core areas of Ibadan city for instance, do not benefit from waste disposal service as many of their houses do not directly face the roads or streets and even, the roads are narrow for easy movement of refuse trucks. And those that have their houses close to road could not afford the service levy hence, they usually dump their solid waste into any nearby stream or river, drainage, open land or dilapidated buildings. At times, they bury or burn their waste.

Moreover, many forests in Ibadan have been turned open land as a result of indiscriminate cutting of trees basically for domestic purpose by the city dwellers. The ancient Agala forest (Igbo Agala) in Ibadan for example was massively deforested during the then military head of state (Ibrahim Babangida) regime when there was scarcity and hike price of kerosene. Indiscriminate hunting, even in the so called forest reserves has led into the extinction of many animal species. Due to the rapid growth of the city, people construct houses close to and even on the natural water channels which have been shown to be responsible for the increasing cases of flood in Ibadan. Flooding is traced to the annoyance of river goddess by some people hence, sacrifices are made to appease her. But not taking the cognizance of the fact that heaps of refuse thrown into rivers, river channels, drainages and even houses built on river banks block the easy passage of flowing water leading to flooding.

These and many other socio-cultural practices are now the order of the day most especially in urban centres. The practices have not only inculcated into the existing culture but passed down from one generation of urban children to the next. Hence, the traditional cultural ways of protecting the environment are becoming things of the past. With the prevailing cultural value disintegration and its attendant implications (environmental problems) in the country, it becomes pertinent to revisit cultural issues vis-à-vis environment in Nigeria. Finding solution to problems being encountered by human beings has cultural undertone hence, the need to consider cultural aspects of such problem (Oladiti and Ajiboye, 2012). It is evident from the foregoing that different human cultures have had varying effects on their environmental practices. Hence, instead of holding deficit views about students' environmental attitudes, knowledge and practices, education stakeholders should consider students' culture especially, their cultural practices in the course of teaching and learning environment-related concepts

especially, in Social Studies. Students' cultural practices which are environment friendly should be encouraged in order to promote favourable environmental practices among students.

Traditionally, environment is an all embracing concept. It comprises living (human beings, animals, vegetation) and non-living (rock, river, sunlight, air, etc) beings which make-up the whole human environment. Therefore, to ensure harmonious living together of these animate and inanimate beings, human beings who claim to be unique (superior) must be cautious not to threaten the other inhabitants in the environment. For example, the Yoruba give due respect even to the smallest insects to the extent that they give them food wherever (bush path, farm, forest) they see them. It is believed that they too have lives of their own and not only this, it is their belief that some of these insects bring fortune (Ogunade, 2007). Moreso, motorists especially in Yorubaland tend to slow down speed when animals like duck, sheep, among others are come across on the road. If unintentionally, they hit a duck, they stop and put money with other things on the dead duck. Refusal to do this may lead to fatal accidents. In order to corroborate the belief of the Yoruba on the animals' right to life, this is said for example as regards insects:

Yi ese re si apakan, ma se te kokoro ni
Kokoro ti iwo ko le da, Olorun lo le da

Side step your feet, do not step on that insect.
The insect you can not create, God can create it.

This saying and many other nature friendly sayings guide the behaviour and actions of the indigenes toward other inhabitants in the environment. Hence, cultural beliefs and practices tend to influence people's environmental practices. *Though, it may sound ridiculous, but this is the way of indigenous knowledge and wisdom. These are few in support of the Yoruba's cultural belief and practices as regards the integrity of creation which by extension is the environment.*

According to socio-cultural perspectives, the differences in perceptions of appropriate environmental practices cannot be cultural or contextfree (Hammer and Maccio, 2004; Martinez-Rodan and Malave, 2004; and Vygotsky, 1978). A child is born into an existing culture (Azewu, 1983) most especially the culture of his parents in which he learns (directly or indirectly) through interactions with his parents, older siblings, relatives, peers and even others in the immediate cultural environment of the child. On the strength of this, the culture of the parents becomes the culture of their child

(ren). Hence, parents' cultural attitude and practices as regard nature are consciously or unconsciously inculcated by their children.

Studies abound on cultural practices and health, cultural practices and gender, cultural practices and globalization, cultural practices and childcare, cultural practices and dietary preferences, cultural practices and persons with disabilities, cultural practices and street children migration, to mention but few. But, there are scanty studies as regards cultural practices and environmental issues in Nigeria. Ogunade (2007) who worked on environmental issues related it only with Yoruba religion and many other studies are based on the effect of instructional strategies like problem-based and shadow learning (Olaajo, 2016), outdoor educational activities (Olatundun and Adu, 2013), service learning and educational trip (Gbadamosi, 2012), value education (Ogunbiyi, 2006), full and quasi-participatory learning (Ajitoni, 2005), to mention but few on the academic achievement in, attitude to and practices on environmental issues. However, less research have focused on the impact the predictor – cultural practices has on the effectiveness of these strategies.

Studies which combine variables in this study: cultural practices, religious beliefs, home location, gender role and participation in environmental conservation clubs in predicting students' environmental literacy in social studies have not enjoyed much research focus.

2.3.4 Religious beliefs and students' environmental knowledge

As people's religious belief is closely related to their knowledge (awareness) on the environmentso also, environmental related issues are viewed and explained from religious perspectives. Hope and Jones (2014) carried out a study in United Kingdom (Britain) on the impact of religious faith on knowledge of New Ecological Paradigm (NEP) and Carbon Capture and Storage (CCS). The results from NEP scale items given to participants – Christian, Muslim and Non-religious groups as a questionnaire are presented and followed by qualitative focus group data.

A one-way ANOVA with post-hoc (LSD) comparisons was conducted to compare their mean scores. There was a significant difference in the NEP scores between the two groups – religious and non-religious $F(2, 11) = 7.63, P = .008$. The mean score for the secular participants was significantly higher than both the Muslim ($P = .006$) and Christian ($P = .007$) groups. The mean NEP scores for the Muslim and Christian groups were comparable ($P = .594$). Thus, while all three groups held pro-

environmental knowledge, these were more pronounced in the secular rather than the religious groups. This was because secular participants have a high level of engagement with the political and scientific debate on climate change and to see environmental issues as a high priority than the religious groups.

In a similar study, Funk and Kennedy (2016) investigated on the belief of Christianity, Islam and Buddhism about climate change and climate scientists in America. The Buddhism, Hinduism and Jainism who had higher climate change science test score got 71%, the Christianity religion had the second highest score of 47% while the Islamic religion had 41% score. The explanation for the relative low environmental knowledge scores (47% and 41% respectively) and low risk perception of both Christian and Muslim sects might be as a result of their belief that only God has power over natural happenings, makes things happen as He wishes, and that only God can intervene when unfavourable natural occurrence like change in climate, drought, ozone depression, among others, strike. Human beings therefore, should focus more on life after. In contrary, the other religious sects believe that human beings have the capacity to determine their present and future, and even that of the environment. Hence, human beings should device ways out of unpleasant natural happenings like climate change. The variations in their knowledge scores could have implications for climate change mitigation including the transition to cleaner fossil fuel technologies.

Still on the foregoing, formal interviews and focus discussions were used by Feyisetan, Asa and Ebigbola (2004) to find the correlate of mothers' religious beliefs and practices on their management (preventive and curative measures) of childhood environmental health diseases. Among other findings, it was found that many mothers have strong belief in "abiku" (child's premature death which is spiritual) and that abiku required treatment from religious healers irrespective of the nature of the illness. To the scholars, many mothers lack accurate environmental knowledge about the causes of the selected environmental health diseases.

However, Duan and Joseph (2010) in their study "Impact of people's socio-economic factors on their environmental knowledge, attitude and practices" found among others that there is a negative relationship between people's religious beliefs and their environmental knowledge. To them modernization and westernization are strong factors weakening people's religious beliefs as regards the environment.

As these findings vary, religious belief still remains a factor to reckon within any environmental education discourse. Moreso, from literature much have not been

done as regards the influence students' religious beliefs might have on their environmental knowledge most especially, in Social Studies. There is therefore the need to further investigate the influence of students' religious beliefs on their learning outcomes in environmental education concepts in Social Studies.

2.3.5 Religious beliefs and students' environmental attitude

Religion which is a system of belief determines environmental attitudes and ethics. The existence of many religions in the world explains the reasons for disparities in the attitudes of people towards the environment. From studies, some religions are more favourably disposed to nature than the others. The implication of this is that varied degrees of environmental feelings and concern exist in the religions of the world. This fact points to a need to examine different religious beliefs in relations to environment within a particular country context.

Ever before the introduction of Islam and Christianity, traditional religion had been the dominant religion in Africa especially in Nigeria. Traditionalists hold a strong belief in the existence of God (Supreme Being) and lesser deities. These lesser deities obtain their power from the Supreme Being (Abioye, 2014). They are regarded as intermediaries between God and man. The lesser deities are widely worshipped by the traditionalists and to great extent, belief in these deities influence the thinking and behaviour of traditionalists in Nigeria. Traditionalists form a substantial number in the population of Nigeria (Abioye, 2014). For this reason, the influence of traditional religion in the political, social and even environmental life of the people in the society cannot be overemphasized.

The traditionalists are always conscious and recognise God's divine ownership of the universe. They are also of the belief that human being is a lodger (just as other creations) on God's universe (Idowu, 1978). This fact makes them to be careful in how they treat or relate with the earth. Most religions of the world hold the belief that God is the Originator of the earth. The idea that the earth is formed and planned by a Supernatural Being is further strengthened by all the philosophical schools of thought on creation as they believe that all what God created are for a reason. This Being is believed to be imperceptible, ever-present and everlasting. All these thought and ideas as regard Lord's creation form the origin of the religious beliefs of traditional people. They have great respect for the environment. The traditionalists do not usually interfere with nature anyhow. To them, all natural phenomena are formed and positioned there

for an important reason. This is done purposely to provide a conducive environment for both living and non-living beings. Many of these natural phenomena house divinities and spirits (Awolalu and Dopamu in Ogunade, 2007). With this, many of these natural features are personified. For example, rocks, thick forests, rivers, hills, trees, lakes, animals, mountains, among others are regarded as deities especially among the Yoruba (Awolalu and Dopamu in Ogunade, 2007).

For instance, the Osun grove in Osogbo, which houses forest and river, is believed to be sacred place for the spirit of river (river goddess). The river which is said to be a herbal mixture (agbo) from many plants is used to cure diseases and provide children for barren women. Likewise, the Ibadan hill (Oke-Ibadan) and Olumo rock (Oke-Olumo) which are believed to be the places of abode for the spirits of hill and rock rendered immense help for the indigenes as they were used as hideout protecting them from the attack of enemies in war days and still bless and provide good things of life for the indigenes (Awolalu and Dopamu in Ogunade, 2007). Similarly, Erin Ayonigba sacred fish river in Erinjiyan-Ekiti is believed to be goddess of prosperity by the locals, so also, age-long sacred crocodile is worshipped in Oje (Dele's house) in Ibadan while Agbele (Igbeti), Orole and Olosunta (Ikere-Ekiti) hills are sacred hills which are worshipped by the locals. All these spirits are celebrated annually through the different natural features which serve as their places of abode, and many have become tourist centres for both national and international observers (Abioye, 2014).

Islam has philosophical, ethical and theological overlaps with environmentalism, stewardship and harmony values, leading Whitford and Wong (2009) to hypothesise that Muslim communities will be associated with greater environmentalism than Christian communities. According to Quran, human beings have been assigned the duty of putting all things that God created in custody. Moreso, respect for all living things and just dealings with non-human beings due to the fact that all things (living and non-living) are created by God are so much germane (Hope and Jones, 2014). Muslims as God's representatives on earth (*Khalifa*) are liable to give account of their stewardship on earth to God.

The care for animals and plants is at times taken as part of the fourth pillar of *Zakat* (Gardner, 2013). To him, Islamic law allows some things (*halal*) and disallows (*haram*) others. For instance, consumption of pigs, scavengers's dead animals, and carnivores are forbidden. Humans should not set animals against each other in fight just

for entertainment, animals should not be maltreated, either by caging without food or by beating them unjustly.

The power that Islam gives to human beings over animals should not be misused that is, humans should be very much considerate when exercising the power. Justice is very germane to Islam. Hence, abuse of animal or any other creations in the environment by human is seen as injustice (McGrath, 2013). Moreover, natural calamities such as floods, droughts, famine and earthquakes, are taken to be Allah's warning that humans have gone astrayed from the path of righteousness and justice (Hope and Jones, 2014). From the foregoing, it is glaring that God solely owns the environment while humans are given divine responsibilities to take care of God's belonging (environment).

Within Christian circles, there are contrasting themes of "anthropomorphic dominance" and "stewardship dominance". This contrast occurs as a result of the interpretations of different aspects of the creation narratives. White (1967) for example, in his seminary work in this area focused on branches of the church that emphasize texts such as Genesis 1:28. This states that humans were given a divine edict to have dominion over the earth and increase in number. He contended that the dominion attitude of Christianity explains the scale of environmental destruction in the modern world.

However, Hope and Jones (2014) are of the view that other churches, particularly the liberal and protestant churches, preach divine stewardship as stated in Genesis 2:15 where human (Adam) is put into the garden of Eden and given divine instruction to dress and watch over it. Stewardship implies a managerial relationship to nature. Humanity's task is to govern and order nature prudently and wisely, like a good governor. This shows that human is saddled with the duty of taking good care of the environment in which he lives. This divine service towards the environment is expected to be generational. Many contemporary Christian organisations are of great environmental concerns. This thus, led to the formation of and active involvement in environmental groups. Hand and Van (1984) reports that in the US, members of denominations such as Baptists and Mormons are more likely to adhere to the first (anthropocentric nature), while Episcopalians and Methodists the second (Stewardship nature).

To add further complexity, some contemporary movements focus on apocalyptic rather than creation narratives. Apocalyptic beliefs are widely reported in

American Fundamentalist and Pentecostalism Movements (AFPM). Guth (1995) expresses worry that the position of these present-day churches as regards the environment may weaken the recent environmental feelings and actions in their congregations as they concentrate on getting ready for the life after. Fundamentalist Christian faith may even persuade their members to gladly receive the increasing environmental challenges as some of the second coming signs. With these views, the fact is ascertained that differences exist among religious beliefs as regard attitudes to environmental issues.

Loris and Michael (2009) compared the environmental attitudes of the Mormons members of the Church of Jesus Christ of Latter-day Saints in United States in Utah environment with that of the general United States population, substantial differences were revealed between the Mormons and general U.S. population, meaning that some major environmental attitudes and behaviours among Mormons do certainly, remain different as compared to the national culture generally. Mormon respondents expressed relatively higher levels of environmental concern than the general United States population.

In another study, Kazz (2010) notes that Judaism, the originator of the Abrahamic Mythos upon which Christianity is built develops its environmental concerns from both “Dominion Theology” and “End Time Theology” that seem to have attracted many Christians today. Moreover, Buddhism, Hinduism and Jainism religions are of the view that human beings must relate with the environment not as a race of heartless dictators, but as an important part of the world. The Jains go so far as to avoid harming insects and even plants whenever possible.

A mixed methods study was carried out in United Kingdom by Hope and Jones (2014) on the impact of religious faith on attitudes to environmental issues and Carbon Capture and Storage (CCS) technologies among United Kingdom Christian, Muslim and Secular (non-religious) communities. Findings reveal that both Muslim and Christian respondents had relatively low perception of urgent need for environmental matters, especially change in climate because of their beliefs in life after and God’s intervention. Secular participants showed more feelings and concern for environment and other related environmental matters specifically, climate change. Lack of belief in God’s intervention power and after life made the participants to focus more on human intervention and responsibilities, having it in mind the urgent need for different technologies especially, CCS. Respondents expressed concern as regards environmental

issues, particularly change in climate. Non-belief in life after or God's intervention made secular respondents to concentrate on the need for human action and duty, putting in mind the perceived need of a variety of technologies including CCS.

From the foregoing discussion, it could be said that religion is constantly the main origin of a person's world view, attitudes, feelings and values as regard nature and in relation to other human beings and even, the supernatural beings. Religious beliefs shape concepts about the relationship between humans and the environment. The management of the nature as a basic facet of faith is observed to have a great positive implication on the security of the environment in future. A child cannot detach himself from the religion of his family most especially, the parents, for to do so is to be severed from his roots, his foundation, his context of security and his kinships. With this, the religion of the parents is the religion of their children. Hence, the parents' religious belief as regards the nature (environment) is directly (consciously) or/and indirectly (unconsciously) passed unto their children.

2.3.6 Religious beliefs and students' environmental practices

Previous studies have noted that children in Nigeria die mainly from environmental health related diseases - malaria, diarrhea, cholera, whooping cough and neonatal tetanus (WHO, 2017;Oloruntoba, Folarin, Ayede, 2014; Tomori, 2012; and Feyisetan, Asa, Ebigbola, 2004) despite the fact that these diseases are preventable at low cost to the individual still, large percentages of children are subjected to many episodes of these diseases. Moreover, Akogun and John (2008) argue that non-adoption of modern preventive and curative measures cannot be attributed to poverty alone since the cost of some measures is not exorbitant.

However, several studies have pointed it out that, besides inadequate availability of environmental care services in many urban areas and socio-economic status of people, certain religious beliefs influence people's environmental care - seeking behaviour (practices) (Oladepo and Sridhar, 2012; Oyemade, Omokhodion, Olawuyi, Sridhar, 2009).

The outcome of their findings reveal that there is a strong relationship between mothers' perceptions of the belief in "abiku" (special children who have come from the spirit world and can die at will unless certain rituals are performed) and the way mothers manage childhood environmental health-related diseases. They report that mothers failed to acknowledge the fact that their poor environmental sanitation

practices- refuse disposal practices; not washing hands with water and soap before food preparation, feeding children and after leaving toilet; child defecation could lead to increased children mortality.

Moreover, many give environment-related misfortune and disaster religious interpretation. For instance, flooding to African traditional religionist is a sign that river goddess is angry and not as a result of indiscriminate dumping of refuse into rivers, waterways, drainages and the likes. Similarly, the outcome of the study carried out by Guth (1995) on the perceptions of different religious groups on the cause(s) of environmental problems, the apocalyptic beliefs are broadly reported in American Fundamentalist and Pentecostalism movements (AFPM) where the believers see manifestation of environmental problems like flooding, global warming, climate change, etc. as signs of end time that is, second coming of God.

Moreso, natural calamities like floods, droughts, famine and earthquakes are seen as the signals of Allah's warning that humans have moved away from the paths of righteousness and justice (Hope and Jones, 2014). Similarly, some religious adherents burn incense during religious worship. To them, the more the scent and smoke, the more evil spirits are chased away. However, they do not take note that the smoke from the burnt incense becomes pollutant which pollutes the air. Also, the uncontrolled use of loud speakers by many religious houses leads to noise pollution. Some religious bodies even build their religious buildings on river banks and water channels hence, they obstruct the free flow of water, leading to flooding most especially, during the rainy season. These diverse religious beliefs make people to involve themselves in certain environmental practices which are inimical to the environment.

There are varied religious beliefs, as there are more than one religion specifically, in Nigeria. A child whose parents see the care of the environment – planting and nurturing of trees and flowers; recycling waste materials for use; keeping environment clean; reducing wastes, using handtowels/napkins instead of papers to clean dirt in home; re-using used nylon bags during shopping; using basket or container instead of buying nylon bags during shopping as the God given responsibility of stewardship will also see the care of his environment at home, school and any other places where he finds himself as divine assignment. On the contrary, a child whose parents believe in environmental dominionship – treating animals with cruelty; felling trees without the thought of replacement; dumping refuse indiscriminately; less concerned about the beautification of the home compound by planting flowers, etc will

automatically see no reason why he should not do whatever he likes to the environment. Hence, parents' religious beliefs may have varied impacts in children's environmental practices.

However, Duan and Joseph (2010) report from their study that people's religious beliefs do not correlate with their environmental practices as people's home location and acquisition of higher learning (education) influence their practices in the environment, than their religious beliefs.

Nevertheless, from literature it is clear that significant events have been piling up in research and actions as regard the connection between religious beliefs and environmental practices but there has been little attention given to this issue in Nigeria. Though, there has been ongoing research about the effects of instructional strategies on academic achievement in and attitude to environmental issues. However, less research have focused on the impact the predictor variable - religious belief has on the efficacy of these strategies. Besides the impact of other combined socio-demographic factors like cultural practices, gender role and home location on students' environmental practices have not been given due attention.

2.3.7 Home location and students' environmental knowledge

Studies have revealed that insufficient planning of urban land uses in Nigeria and non-compliance to the available master plans have increased urban problems (Fuller, 2008; Fourchard, 2003 and Oyesiku, 2002). Report from a study carried out by Coker, Awokola, Olomolaiye and Booth (2007) on "challenges of urban housing quality and its associations with neighbourhood environments in Ibadan city" says that housing quality and that of its environment (area where the house is located) depreciate as the number of inhabitants increases. Population increase without a correspondence facilities leads to strain or pressure on the available facilities, resulting to environmental degradation. The inner core region, occupied by early settlers in the city, is said to have presented the worst scenario with respect to both quality of dwelling and neighbourhood environment. No wonder, environmental problems (pollution, flooding, solid waste management problem etc.) permeate most poorly planned urban areas. Hence, the quality of a child's physical environment has been found to have impact on student's environmental behaviour and achievement in school (Durojaiye, 2015)

It has been noted that the area where a child's home is situated to a large extent influences his/her environmental learning and mental wellbeing in general (Bolu-Steve and Sanni, 2013). The strongest sense of home according to Mario (2010) commonly coincides geographically with a dwelling. Usually, the sense of home attenuates as one move away from that point, but it does not do so in a fixed or regular way. A student's residential location has a great impact on him right from his formative age. It mostly lays the foundation on which adult life is built. Major individual differences emerge well before children arrive at school. This observation made Durojaiye (2015) to conclude that the condition and immediate surroundings in which children find themselves affect them in all ramifications. The differences in students' residential area types explain their varied performances in environment-related topics test in school.

However, Ebong (2014) in his study on the influence of home location on environmental health knowledge of students from rural and urban location schools found that there was no significant difference in the knowledge mean scores of students in both the schools. This may be due to the exposure of students to the teaching and learning of environment-related concepts in school's subjects. In a related study, the environmental knowledge of market women from two different markets (Bodija and Gbagi) in Ibadan was determined. It was discovered that the women in both markets had good environmental health knowledge. This result may be due to the influence of the mass media (radio, television and newspaper) and other non-formal agencies which enlighten people regardless of their different environmental locations.

Oladapo (2011) in his empirical study on effect of a participatory environmental education programme on market men and women's knowledge, attitude and practices in solid waste management in Oyo State discovered that there was significant main effect of market location on participants' environmental knowledge. Market men and women in urban market had higher environmental knowledge than their counterparts in rural market.

Moreso, Gbadamosi and Ajitoni (2015) who worked on effect of two modes of community-based instructional strategies and school location on primary school pupils' environmental knowledge in social studies found that there was no significant difference in the environmental knowledge scores of pupils from urban and those from peri-urban schools. That is, school location has no significant effect on pupils' environmental knowledge ($F(1,251) = .02; P > 0.05$).

2.3.8 Home location and students' environmental attitude

Studies have shown it that the socio-economic status of parents mostly determine where (planned or unplanned area) their home would be located (Adelekan, 2016; Durojaiye, 2015; Bolu-Steve and Sanni, 2013; and Mario, 2010). In demographic and physical planning terms, Ibadan the capital city of oyo state is divided into three zones namely; high, medium and low-density zones. The high-density zone inhabits early settlers and the area is characterized by poor layout, poor sanitation and large population. The medium-density zone is better compared with that of high density while low-density zone has relatively new buildings, good layout with high quality sanitation utilities.

The differences in density zones in Ibadan are said to have effects on children's environmental knowledge, attitudes and practices. For instance, a child whose home is located in a planned residential area tends to appreciate hygienic and aesthetic environment. Hence, he becomes an environment-friendly child. In confirmation of this, Mulkeen (2005) is of the view that people from planned areas seem to be more conscious, active and quick-witted in the way they go about combating environmental problems than their counterparts in the unplanned setting. A student from an unplanned area characterized by dirty, noisy traffic, noisy sound of machines from ply-wood industry and market square may not appreciate a clean (tidy) and quiet environment. The value of waste bins is meaningless since he can conveniently dispose of dirt either in drainage, building under construction or even an open land very close to his house. He loves tuning electronics into its highest volume since he is already used to noisy environment. Hence, his stewardship attitude to the environment becomes poor.

Oladapo (2011) who carried out an empirical study on effect of a participatory environmental education programme on market men and women's knowledge, attitude and practices in solid waste management in Oyo State found that market men and women in rural market had higher environmental attitudes than their counterparts in urban market.

In contrary, Chinatu (2012); Olatundun (2008) and Ahoje (2000) found that there was no significant difference in the environmental attitude and values of students from urban and rural schools. Gbadamosi (2012) in the same vein discovered that there was no significant effect of school location on pupils' environmental attitude ($F(1,251)$

= .00; $P > 0.05$). Pupils from urban schools and those from peri-urban schools thus do not differ significantly in their adjusted posttest environmental attitude scores. Pupils from urban schools had slightly higher environmental attitude score ($\bar{x} = 17.02$; adj. dev = $5.34E - 04$) than the peri-urban schools pupils ($\bar{x} = 17.01$; adj. dev. $-9.48sE-03$).

2.3.9 Home location and students' environmental practices

The importance of home-location is rightly observed by Williams (2006) as he said "The physical environment forms the principal dictator of the well-being of man". An environment with good sanitary condition is mostly free from environmental health diseases. Students from such environment demonstrate good environmental practices.

A survey study on the influence of home location on the environmental health knowledge and practice of secondary school students was carried out in Zaria. Two secondary schools (one from urban and the other peri-urban) were used for the study. The findings indicated that although the students' knowledge of environmental hygiene was high for the two schools that is, no significant difference in the knowledge mean scores of the two schools, but there exist significant difference in the environmental practice mean scores of the two schools. Ebong (2014) points out that adequate opportunities and sanitation facilities provided at school and homes of students from urban located school allowed them to demonstrate good environmental practices than their counter parts from peri-urban located school. The inadequate opportunities and lack of sanitation facilities at school and homes of the students from peri-urban located school did not allow them to practice the environmental health knowledge they had acquired through the teaching-learning process in the class.

Fapojuwu (2015) carried out a study on rural and urban school locations as strong predictors of in-service and pre-service teachers' environmental knowledge, attitudes and practices. The result shows that there is a significant difference between rural and urban school based teachers' environmental knowledge, attitudes and practices. The in-service and pre-service teachers from urban school location had higher environmental knowledge, attitudes and practices mean scores than their counterparts from rural school location.

A cross-sectional survey was carried out by Oyemade, Omokhodion, Olawuyi and Sridhar (2009) to determine the environmental health knowledge, attitudes and hygiene practices of mothers of children aged less than five years in two markets in Ibadan - one with poor sanitary conditions (Bodija) and the other one with better

sanitation facilities (Gbagi). While Environmental Knowledge Test (EKT) was used to measure their knowledge, Observation Rating Scale (ORS) was used to determine their environmental attitudes and practices. Among other findings, the mothers in both markets had good environmental health knowledge but, waste disposal and personal hygiene practices were poorer among the women in Bodija. The researchers therefore urged the Public Health Authorities not only to focus on improving mothers' knowledge on environmental hygiene but, also on favourable environmental practices within and outside the market environments.

In a related study Oladapo (2011) carried out an empirical study to determine effect of a participatory environmental education programme on market men and women's knowledge, attitude and practices in solid waste management in Oyo State. Amidst other findings, he found that there was significant main effect of market location on participants' environmental practices. Market men and women in rural market had higher environmental practices than their counterparts in urban area.

Similarly, Gbadamosi (2012) in her related study found school location to have significant effect on pupils' environmental practices ($F(1,251) = 75.80; P < 0.05$). That is, there was significant difference in the environmental practices scores of pupils from urban and those from peri-urban schools.

Though, studies abound on environmental issues but, based on available literature, most of them are school and market locations. Others who worked on child's home did it on language literacy (reading, writing and speaking) and not environmental literacy. Besides, most environmental studies focus on urban and rural locations, forgetting the fact that even in an urban location, there are slums (unplanned areas) which may have influence on residents' environmental knowledge, attitudes and practices. Hence, leaving studies on influence of students' home-location (planned and unplanned) on their environmental practices for further findings.

On the strength of the foregoing, this study tends to find out the predictive tendency of home-location (planned and unplanned areas) on junior secondary school students' environmental literacy in Social Studies.

2.3.10 Gender roles and students' environmental knowledge

In the work of Adekunle (2005) it was discovered that gender has significant effect on students' academic achievement, female did better than their male counterparts in some environmental education concepts in Social Studies. In similar

vein, Ogunbiyi (2006) reports that female subject with high academic ability with mean score of 42.81 were able to solve environmental problems better than their counterparts (male) with low academic ability with mean score of 38.06. This may be because the more intelligent and the more skillful a student is, the better will be the level of his understanding and performance (Bora in Omiyefa, 2015). Olatundun and Adu (2013) also report that gender has significant main effect on pupils' environmental knowledge. Female pupils performed better ($x = 18.58$; $SD = .77$) than the male counterparts ($x = 17.22$; $SD = .59$) in environmental knowledge. Also, Macdonald and Hava (2010) in their study claim that there is a significant gender difference in environmental knowledge of male and female students. Gbadamosi (2015) observed that this difference could be attributed to gender "stereotyping" whereby different roles that are assigned to girls and boys influenced their performances.

In a related study carried out by Ogunbode and Arnold (2012) on environmental awareness and attitudes of people in Ibadan, Nigeria, amidst other findings, male respondents had more knowledge than the female respondents, but there was no significant difference in their attitude scores. Oyewole (2003) conducted her study on the development of participatory environmental education programme for Colleges of Education students in Lagos State. Among other findings, she found that male performed significantly better than their female counterparts in the knowledge of the environment test. Sharbbier's (2006) finding also proved that male possessed more environmental knowledge than their female counterpart.

In contrary, some scholars found that gender factor has no impact on students' performance (Aremu, 1998; Udokpon, 1989; Osho, 1986). For example, Gbadamosi (2012) is of the view that gender is not a strong determinant of pupils' knowledge in environmental issues and problems in social studies. Also, Wang and Cheng (2010) and Abiona (2008) found that there was no significant difference in the environmental knowledge of male and female students. Also, Oladapo (2012) supports Nkire (2011) findings and revealed that there was no significant main effect of gender on the participants' knowledge, attitude and practices on waste management, though female participants had better practice towards solid waste management than their male counterparts.

The results of most research studies on students' gender and environmental knowledge are contradicting, and this necessitated further study in this area. Moreso, many studies were experimental in nature, using gender as moderator variable and have

also mostly focused on gender in general and not specifically on gender role. This study intends to find out whether the gender roles carried out by male and female students influence their knowledge on the environment.

2.3.11 Gender roles and students' environmental attitude

Fapojuwu, 2015; Robert and Reuven, 2012; Murdoch, 2015 and Kissork, 1997 reports that female teachers and female students show more concern when it comes to environmental issues and problems than their male counterparts. This is based on the fact that, from childhood, women are socialized to be family nurturers and care givers (Fapojuwu, 2015). The nurturing attitudes that result from this socialization are translated into attitudes toward nature and environment and thus, more protective than that of their male counterparts.

Sharbbier (2006) reveals that there are significant differences between Indian and Iranian secondary school students in their level of environmental attitude. Also, there are significant differences between them in environmental attitude across and within the two groups with regard to their gender. Fapojuwu (2015) states that there is a significant difference in the attitudes of male and female pre-service and in-service Social Studies teachers towards environmental education concepts. This means that there is a significant effect between the attitudes of male and female pre-service and in-service teachers towards environmental education concepts. The study here shows that women tend to show or express greater concern than men about local environmental issues. But, Bernard and Hedges (2002) in their study attested to the preponderance of male teachers as well as male students more positive environmental attitude than female counterparts.

In contrary, Kumar and Patil (2007) revealed that there is no significant difference between male and female students in their attitudes toward environmental pollution and related issues. Abraham and Arjunan (2004) also found that only a smaller proportion of the secondary school students possess high environmentally responsible behaviour whereas no differential effect of gender and locale were noticed in their pro-environmental behaviour. Olagunju (1998) investigated the impact of two curriculum packages in environmental education in Biology. Gender and subject specialization were used as moderator variables. Among other findings, students' gender and subject specialization did not have any significant effect on students' cognitive, problem-solving achievement and environmental attitude scores.

This present study is survey study using gender role specifically as predictor variable of students' environmental attitude and practices. Besides, from the available literature, not much work has been done on gender role and the extent to which the other variables in this study: cultural practices, religious belief, home-location and participation in environmental conservation club predict students' knowledge on, attitude to and practices in the environment in a combined study as this, has not been determined.

2.3.12 Gender roles and students' environmental practices

The significance of the connection between environmental safety and gender roles has been proved by a broad group of field reports and impact appraisal over the last years. For instance, the office of the Secretary General on Economic, Environmental Activities and Gender of the Organisation for Security and Cooperation in Europe carried out an impact assessment programme in the year 2009 basically on the *Connectivity Between Gender Roles and Environment*. Among other findings, it was discovered that the management and conservation of environment and its resources especially, at the local level rest on women.

On the strength of the foregoing, Obodumu, Ogbo and Utulu (2010), conducted a research on *Women Empowerment and Food Security*. In the midst of other findings, it was found that empowering women especially the rural women leads to higher productivity and food security. To them, women by virtue of gender take up the roles of keeping both home and its environment clean, preparing food for the household and caring for the general welfare of household members. This caring attitude is thus, transferred to the environment. Similarly, the research carried out by Wahab (2014) on the *Roles of Women in Environmental Sanitation* proved the fact that women are connected to environment through the different roles they play which have bearing with the environment. To her, women are central to the achievement and sustenance of environmental sanitation leading to sustainable development. This connotes an intergenerational development that takes into consideration not the well-being (needs) of today (present), but also, that of future generations.

It is obvious from the foregoing that one cannot give what one does not have, an environmentally literate woman (parent) directly or indirectly trains her children most especially the females (who are by traditions care givers) on environmental ideas and practices which help in developing favourable attitude to and knowledge on the environment.

However, Oyewale (2015) from his investigation on the effect of a community based participatory approach on environmental knowledge, attitude and practices of rural communities' inhabitants in Ibadan reports that gender has no significant effect on participants' environmental knowledge, attitude and practices. Oladapo (2012) reveals that there is no significant main effect of gender on the participants' knowledge, attitude and practices on waste management, though female participants had better practice towards solid waste management than their male counterparts. Nkire 2011; Wang and Cheng, 2010; and Abiona, 2008 who in their separate studies in environmental education also found no significant effect of gender on environmental learning activities.

These contradicting views as regards the influence of gender roles on students' environmental practices need further empirical evidence which this present study is out to do.

2.3.13 Participation in environmental conservation club activities and students' environmental knowledge

Research evidence has shown that educational experiences that are active, social, contextual, engaging and student-owned lead to deeper learning (Salako, 2014; Ajitoni, 2011; Thanasoulas, 2009; Olatundun, 2008; McMahan, 2000; Kukla, 2000 and Vygotsky, 1978). To them, student as the primary focus of instruction and interaction with "doing" is of primary importance. This thus, led to the establishment of school-based club activities throughout the world, Nigeria is not an exception. On the strength of this, schools' programmes focusing on students' participation and creativity aside the learning activities in formal classroom setting have attracted a great deal of attention globally. Students' participation in extracurricular activities enhances academic performance and mental alertness. It helps students provide solutions as group or members of a club, to problems in the school and community. Also, it encourages teamwork and help students develop social skills, leadership skills and cooperation between teachers and students. Moreover, it helps students get actively involved in activities that interest them. These activities enable children develop their innate talents and skills which can hardly occur in a strictly academic environment.

Clubs like literary and debating club, science club, farmers' club, cultural club, drama club, press club, environmental conservation club, readers' club, etc. are in operation in most Nigerian schools (Adebile, 2015). Students' participation in

classroom, outdoor and adventure environmental activities are now integral part of numerous school improvement programmes (Ajitoni, 2011). Empirical information from the researcher reveal that students' participation in environmental activities is effective in enhancing cognitive achievement and fostering positive attitudes towards the environment. Involvement of students in school's conservation club activities also increase their capability to be more involved in their own learning and thereby improve their performances in environmental literacy in social studies better than conventional method. Smith and Sobel (2010) corroborate this view as they report that learning activities outside the classroom empowers learners to take ownership of their learning as they move from teacher mediated learning to a higher psychological functioning.

Olagunju and Makinde (2004) researched into the availability and functionality of conservation club programmes in schools for effective environmental communication and Nigerian students' learning outcomes. They report that students' membership and participation in conservation club programmes in schools improved their learning outcomes in environmental concepts in Biology.

In similar vein, Wahab (2006) investigated the impact of environmental conservation clubs on students' attitudes and understanding of environmental problems in junior secondary schools. She found that members of conservation club attend social studies class regularly, participate in classroom activities, have positive attitude and perform better academically in environment-related concepts than those who are not members of the conservation club.

Ana, Oloruntoba and Sridhar (2009) also researched into the contributions of environmental clubs toward improved environmental programmes in selected secondary schools in Ibadan, Nigeria. Their findings revealed that environmental awareness in the three schools studied increased dramatically since the establishment of Youth Environmental Scout (YES) club.

High school students' environmental knowledge and attitudes were assessed by Bradley, Waliczek and Zajire (2010) from a questionnaire administered before and after exposure to a 30-day environmental activities through a conservation club in Florida. Results indicated significant differences in both knowledge gained and attitudes of students after exposure. Students' environmental knowledge scores increased by 22% after they completed the environmental activities. In addition, students' environmental attitudes became more environmentally favourable. A statistically significant correlation was found between pretest knowledge scores and between

posttest knowledge scores. In both cases, students having higher knowledge scores had more favourable environmental attitudes compared with students with lower knowledge scores.

2.3.14 Participation in environmental conservation club activities and students' environmental attitudes

Studies have argued that school-based environmental conservation club activities have a significant impact in improving children's environmental consciousness and feelings (Kioko, Kiringe and Wahungu, 2011; Wahab, 2006; Olagunju and Makinde, 2004 and Mansaray and Ajiboye, 2000). The authors emphasise the role of environmental club in enhancing sustainable environmental development. For example, finding from Kioko, et al (2011) who investigated on youth's knowledge, attitudes and practices in wildlife and environmental conservation in Maasailand, Kenya reveal that schooling and participation in extra-curricular activities through clubs positively influenced the attitude and youth's perceptions of wildlife and environmental conservation practices.

Wahab (2006), who investigated into the impact of environmental conservation clubs on students' attitudes and understanding of environmental problems in junior secondary schools, found that members of conservation clubs have positive attitude towards environment-related issues than those who are not members of the conservation club.

As regards students' participation in conservation club activities and their attitude to the environment, Palmberg and Kuru (2011) found that students exposed to outdoor activities are found to have a stronger relationship with nature and exhibited better social behaviour and higher moral judgments than those who are not exposed to such activities. It is the belief of the researcher that if students are provided with the opportunities of exploring their environment especially through school-based environmental conservation club activities and making environmental decisions then, they begin to see themselves as actors and creators rather than observers and consumers. This therefore instills in them a great deal of concern for the environment.

Several scholars (Olaajo, 2016; Oyewale, 2015; Gbadamosi, 2012; Oladapo, 2012; Ajiboye and Ajitoni, 2008; Ogunbiyi, 2006 and Ajitoni, 2005) have tried to investigate different pedagogical techniques of teaching and learning environmental education concepts in Social Studies effectively in order to enhance students' learning

outcomes in the subject, but scanty studies exist on environmental conservation club activities as means of improving students' environmental literacy especially, in the aspect of attitude formation social studies. Though this club has been used successfully to enhance students' improvement in environmental related concepts knowledge, attitude and skills outside the shores of Nigeria, much work have not been done in this area in Nigeria, most especially in the teaching of environmental related concepts in Social Studies. Most researchers in Nigeria have used this strategy in Integrated Science and Biology but have not actually related it to environmental learning outcomes – knowledge, attitudes and practices in social studies and besides, with the other variables – cultural practices, religious belief, home location and gender roles in this study to predict students' environmental literacy in Social Studies.

2.3.15 Participation in environmental conservation club activities and students' environmental practices

This study tends to link students' participation in school-based environmental conservation club activities to students' knowledge on, attitude to and practices in environment-related concepts in social studies. Moreso, the study intends to present an informal approach; tension and stress free atmosphere of teaching and learning of environmentrelated concepts and issues that is beyond the normal conventional classroom setting. This approach though informal in nature can be of great help to the pedagogical principles of teaching and learning environmental related concepts in social studies and other environmental education subjects in the Nigerian junior secondary schools if well organized and supervised by social studies and other environmental related subject teachers.

School environmental conservation club involves in various activities such as; tree planting exercise, recycling materials, cleaning school compound, participating in the annual World Environment Day (WED) flora and fauna fancy dress competition, holding environmental debates, visiting sites such as markets, forests, dump sites, river sides, and organizing campaigns and talks to sensitize the communities about the need for a sustainable environment. Participation in environmental club activities addresses two critical gaps in the experience of many children now growing up in Nigeria - contact with the natural world and with the community. Ana, Oloruntoba and Sridhar (2009) who worked on the contributions of environmental conservation clubs toward improved environmental programmes in selected secondary schools in Ibadan, Nigeria

discovered that having Youth Environmental Scout (YES) clubs in schools would increase awareness and good environmental practices which are key elements of environmental education. Chinatu (2012) asserts that the approach offers ways of exposing the younger ones (club members) to diverse environmental learning experiences and activities as they are taken outside the formal classroom to see things as they are in the real sense of it. Moreso, through the activities of the club, members are given lifelong education as they acquire adequate environmental knowledge, form desirable attitudes and develop appropriate skills with which to address environmental issues in the future as adults. In confirmation of this view Kioko, et al (2011) in their investigation found that environmentally responsible behaviour and actions displayed by adults are based on their participation on environmental activities while they were young.

The participation of students in environmental conservation club activities make their homes, schools and youth organisations more environment-friendly by adopting environment-friendly practices, recycling of different materials as well as preserving resources such as water and electricity (Ramchandra, 2013). However, it is the opinion of the researcher that by engaging the young ones in environmental protection through series of environmental management activities will not only creates direct impact on changing children's environmental behaviours, attitudes and improve their knowledge, but possibly influence their parents, relatives, friends and community at large.

The warm spirit in which information is communicated through participation in various conservation activities spurs the learner's aspiration in the teaching and learning process. The activity-based programmes and students' participation in conservation club activities give the opportunities for students to connect learning to local topics, problems and issues. They allow students to connect social matters with environmental challenges. These connections assist learners to understand the core causes of environmental problems involved in the study and their solutions. This submission is in line with that of the Vygotsky who is of the view that every function in the child's cultural development appears twice; first, on the social level, and later, on the individual level. Vygotsky's zone of proximal development (ZPD) regards interactions and collaborative activities between the students and their teacher and even among the students themselves as a better, more dynamic and relative indicator of cognitive development than what children accomplished alone.

In the words of Harrison, Bisong, Akintoye and Ukata (2015) environmental conservation club in schools empowers students to actively involve in environmental related activities and programmes within and outside the school environment. The club allows member students to influence and engage other students, parents, and community members in order to encourage better environmental practices in them. Through the club, member students develop and display good environmental practices. Much of what is taught in the classroom is put into practice. Despite the fact that “learning to live sustainably” is the major focus of everyone worldwide still, environment is not given the needed attention in the formal education system (Pelemo, 2011). Hence, environment becomes an important phenomenon to the club. Students take up activities in the real world in a way that the constraints of the classroom and curriculum would not allow.

Based on this premise, the researcher intends to use environmental conservation club activities as supportive measure of teaching and learning environment-related concepts in social studies, which is beyond the classroom learning experiences. Moreso, this study sees this measure as a part of activity-based learning and a form of informal approach that could perhaps enhance students’ environmental literacy in social studies, involving student-student interaction and teachers as tutor/guide in the performance of all the relevant environmental conservation activities.

2.4 Appraisal of literature

The review of literature reveals that most environmental problems are caused by human beings, and environmental education through social studies education has been pointed out as a remedy for solving environmental problems. Though, some studies have examined students’ sociocultural variables (cultural practices, religious beliefs, gender roles, home location and participation in environmental conservation club activities) investigated in this study. But it has been observed that the majority of the studies were not conducted within the vicinity of Nigeria, also, most of the studies were carried out in disciplines other than social studies. Studies where all these variables are examined together as predictors of students’ environmental literacy in Social Studies have not been carried out based on the available literature. This makes an empirical study in this area germane.

Studies on students’ cultural practices and knowledge on, attitudes and practices in the environment have been shown to have a link, but from available

literature, most studies on this variable are conducted outside the shores of Nigeria and also, students' cultural practices have not been used to predict students' environmental literacy in Social Studies. The scholars who worked on people's cultural practices in Nigeria did not relate it to people's environmental knowledge, attitude and practices but to their health, globalization, childcare, disability and dietary preferences. This vacuum, this study is set to fill.

Research on students' religious beliefs confirms that there is a connection with the dependent variables in this study. However, many of the scholars are not Nigerians as their studies focus on the religions such as Buddhism, Hinduism, Jainism, Judaism etc. prevalent in their area. Some who added Islamic and Christianity religions to the religions in their studies related people's religious beliefs with their environmental attitude alone. Moreso, less research has focused on the link between students' religious beliefs and knowledge on, attitude to and practices in environment-related topics, particularly in Social Studies and in Nigeria. Besides, most studies are not correlational and do not investigate religious belief as a predictor of knowledge on, attitudes to and practices in the environment. This then necessitated finding out the extent to which students' religious beliefs could predict knowledge on, attitude to and practices in environment-related topics in Social Studies in Ibadan.

Reports on students' environmental knowledge, attitude and practices have been on rural and urban locations. Few studies focus on low density areas (planned areas) and high density areas (unplanned areas) in the same urban region, but are not related to students' environmental knowledge, attitude and practices. Studies abound on students' influential effect of home (family) either as a moderator or predictor variable but scanty studies are available on students' home location especially as predictor variable of students' environmental knowledge, attitude and practices. Moreover, many studies on students' environmental literacy in Social Studies use school location as predictor variable while few studies use home-location as predictor variable of students' environmental literacy in Social Studies. Students' home-location and the other students' sociocultural variables investigated in this research have not been previously considered together as predictors of environmental literacy in social studies.

Many research studies focus on students' gender on knowledge on, attitude to and practices in environment. Findings reveal that there are conflicting results on the relationship between students' gender and their environmental knowledge, attitude and practices. While some scholars find a significant relationship between them, there are

others who do not find any significant relationship between them. The present study works on students' gender-roles and the extent at which this variable predicts their environmental knowledge, attitude and practices. Few literature focus on gender-role, though not studied along side with the dependent variables of the study but on occupational mobility and moral values in Nigeria. The importance of gender-role which these studies partly emphasize that is, not related with students' environmental knowledge, attitude and practices and the inconclusive reports on the influence of gender on students' environmental knowledge, attitude and practices prompted the inclusion of gender role as one of the possible predictors of students' environmental knowledge, attitude and practices.

More importantly, most of the studies do not stress the relevance of using school based club activities such as environmental conservation club activities to teach environmental related concepts in Social Studies. Some studies that reported the importance of environmental conservation club activities were on school subjects like Biology, Integrated Science, Geography, among others. Few studies that worked on significance of environmental conservation club activities on students' achievement in environmental related concepts in Social Studies did not use the club to predict students' environmental attitude and practices. And to the best of the knowledge of the researcher, studies on the practical dimension of environmental literacy – inculcation and the display of sustainable environmental empowerment skills have not been done before. Moreso, they did not combine the work with other students' sociocultural variables used in this study. Furthermore, the reviewed empirical literature shows that there is paucity of literature on the extent to which these students' variables could predict environmental literacy in Social Studies. The present study therefore, has been able to fill this important gap.

The reviewed literature shows that though the students' sociocultural variables have a link with the dependent variables in this study, they have not been used to predict them. Many of the studies relate the student-related variables with environmental attitude and practices while few relate them with environmental knowledge alone and even fewer studies which relate the variables to knowledge, attitude and practices were not in Social Studies. This calls for a research in these variables (cultural practices, religious belief, home location, gender roles and participation in environmental conservation club activities) as predictors of environmental literacy in Social Studies.

CHAPTER THREE

METHODOLOGY

This chapter presents the methodology employed in carrying out the study. It specifically discusses the research design, population of the study, sample and sampling procedure, research instruments, validation and reliability of the instruments, procedure for data collection and method of data analysis.

3.1 Research design

The study adopted the survey research design of correlational type. This design is appropriate because it investigated relationship between independent and dependent variables and the researcher has no direct control of the independent variables as their manifestations have already existed. The independent variables in the study are selected to investigate if their manifestations will have any significant predictive relationship with dependent variables.

3.2 Variables of the study

Two categories of variables were used in the study, namely:

- a. Independent variables
- b. Dependent variables

3.2.1 Independent variables

There are five independent variables in this study, namely:

- i. Cultural Practices
- ii. Religious Belief
- iii. Home Location
- iv. Gender Role
- v. Participation in Environmental Conservation Club Activities

3.2.2 Dependent variables

There are three dependent variables in this study, they are:

- i. Students' environmental knowledge
- ii. Students' environmental attitude
- iii. Students' environmental practices

The variables of the study are represented thus:

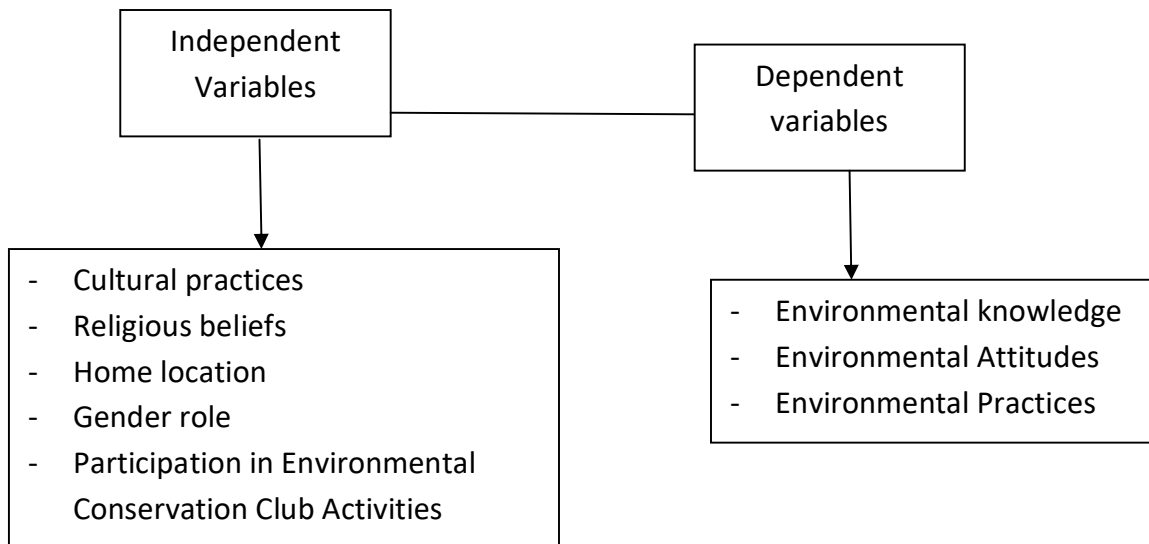


Fig. 3.1: A diagrammatic representation of variables of the study

Source: Researcher's variables of the study

3.3 Population of the study

The population for the study comprised all Junior Secondary School (JSS) students who were members of school's environmental conservation club in Ibadan metropolis (Ibadan North, Ibadan South West, Ibadan North West, Ibadan South East and Ibadan North East). Both public and private junior secondary schools participated in this study.

The rationale for selecting JSS II students is because the environmental education concepts selected for this study are being offered at this level. Hence, their curriculum need not be altered or stopped because of this research study. The students have formed environmental attitude, gained knowledge, developed certain practices and are also members of environmental conservation club in the school. Besides, the students are to a large extent psychologically stable as opposed to JSS 1 students who are just adjusting to secondary school system and also the JSS III students preparing for their final examinations.

3.4 Sample and sampling techniques

Participants for this study were drawn from the five local government areas enumerated in Ibadan metropolis – Ibadan North, Ibadan North West, Ibadan North East, Ibadan South West and Ibadan South East. Thirty (public and private) junior secondary (co-educational and single sex) schools with functional environmental conservation clubs were purposively selected across these local government areas.

Eleven (11) schools from Ibadan North, seven (07) schools from Ibadan North West, five (05) schools from Ibadan North East, four (04) schools from Ibadan South West and three (03) schools from Ibadan South East. Fifty JSS II students who are members of the environmental conservation club were randomly selected from 14 schools, while all club members were enumerated in 16 schools where they were less than fifty. In all, a total of one thousand, one hundred and thirty-seven (1,137) students were adopted.

3.5 Research instruments

Seven research instruments were used in the collection of data for the study.

These are:

1. Students' Cultural Practices Questionnaire(SCPQ)
2. Students' Religious Beliefs Questionnaire (SRBQ)
3. Students' Gender Role Questionnaire (SGRQ)
4. Students' Participation in Environmental Conservation Club Activities Observation Scale (SPECCAOS)
5. Students' Environmental Knowledge Test (SEKT)
6. Students' Environmental Attitude Questionnaire (SEAQ)
7. Students' Environmental Practices Questionnaire (SEPQ)

3.5.1 Students' cultural practices questionnaire (SCPQ)

Students' cultural practices questionnaire was designed to measure the rate at which students' cultural practices predict their knowledge on, attitude to and practices in the environment. It was adapted from Ramchandra (2013) with modification of some of the items in the instrument in order to suit the study. Also, constructive contributions of three lecturers in both Social Studies and Language Units of the Department of Arts and Social Sciences Education improved the instrument. It is made up of the cultural practices of the three main ethnic groups (Hausa, Yoruba and Igbo) in Nigeria. It is divided into two sections – A and B. Section A is designed to get demographic information like name of school, class, sex ethnic group and religion from respondents. Section B comprises 25 items structured along a four-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Participants are required to choose options that indicate the extent of their agreement or disagreement with each of the items.

In order to ensure both content and face validity of the instrument, the researcher made use of some experts in the Department of Arts and Social Sciences Education, University of Ibadan, and feedback from them was used to improve the quality of the items. The instrument was trial-tested on 100 JS II students who would not be part of the sample of the main study to determine the quality of the items. Cronbach alpha was used to determine the reliability coefficient of the instrument. The result yielded the value of 0.75.

3.5.2 Students' religious beliefs questionnaire (SRBQ)

The instrument, SRBQ was developed to elicit responses on influences of students' religious beliefs on their knowledge on, attitude to and practices in the environment. The questionnaire was adapted from Eko (2015). A significant number of items in the instrument were modified to suit the study. It is divided into two sections – A and B. Section A is designed to get demographic information like name of school, class, sex ethnic group and religion from respondents. Section B comprises 25 items structured along a four-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Participants are required to choose options that indicate the extent of their agreement or disagreement with each of the items.

The researcher gave the instrument to some experts in Social Studies and religious studies, University of Ibadan, who helped to establish its content and face validity. The instrument was revalidated in terms of relevance and applicability of the items to the variables in the study by subjecting it to field testing to determine its reliability by administering it to 100 JS II students from Oyo town in Oyo State who are in the same level with, but not part of the participants in this study. The responses of the respondents were subjected to Cronbach alpha in order to determine the reliability coefficient of the instrument and it yielded 0.77.

3.5.3 Students' gender role questionnaire (SGRQ)

The students' gender role questionnaire was designed to draw out responses on the influences which students' gender roles have on their knowledge on, attitude to and practices in the environment. By virtue of the domestic duties assigned to them based on their gender state (male and female), how has this influenced their knowledge on, attitude to and practices in the environment? It was adapted from Faturoti (2004) with modification and addition of ten (10) more items to the fifteen items available in the

instrument before. It is divided into two sections A and B. Section A is designed to get demographic information like name of school, class, sex, ethnic group and religion from respondents. Section B comprises 25 items structured along a four-point likert scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Participants are required to choose option that indicates the extent of their agreement or disagreement with each of the items.

SGRQ was given to some lecturers in the Department of Arts and Social Sciences Education, University of Ibadan, who assisted to establish its content and face validity. The instrument was revalidated and was subjected to field testing by administering it to 100 JS II students in two schools outside the sample school for the main study. Cronbach alpha was used to determine the reliability co-efficient of the instrument. The result yielded the value of 0.78.

3.5.4 Students' participation in environmental conservation club activities observation scale (SPECCAOS)

This instrument was adapted from Adebile (2014). The items in the instrument were modified in line with the related research literature and with the constructive contributions of some lecturers in both Social Studies and Language Units of the Department of Arts and Social Sciences Education, were used to improve the quality of the instrument. Relevant suggestions about how students' participation in ECCA can be effectively measured were given. The observation scale measuring students' participation in environmental conservation club activities was adapted by the researcher to collect information on how students participate in environmental conservation club activities. The various aspects measured by SPECCAOS included: level of students' participation in ECC activities, level of interaction and contributions, students' enthusiasm towards the ECC activities, communicative and creative skills, general group participation and group management. SPECCAOS was scored according to the extent of their participation in Environmental Conservation Club Activities (ECCA) and this was done through observation and a rating scale that was adapted from Adebile (2014). It contains 20 statements showing different degrees and levels of students' participation in environmental conservation club activities. The rating scale ranges from 3-1 within the item as; Frequently (3), rarely (2) and Never (1).

The scoring was done through observation while conservation activities were taking place. Three raters were trained by the researcher to observe participants when

ECCA were going on in each of the selected schools. Only members of the club were qualified as participants in this aspect of the study. The assessment and scoring of the levels of students' participation in conservation club activities were done on group basis. The raters observed and rated the participants simultaneously. The mean scores of the raters were used for final analysis. Positively worded items were scored 3, 2 and 1 respectively while for negatively worded items, the scores were reversed as 1, 2 and 3.

In order to ensure both content and face validities of SPECCAOS, the researcher made use of experts in Social Studies and Language Units who assisted in revalidating the instrument in terms of language construction, clarity and applicability to the variable and the participants. The 20-item instrument was trial-tested on comparable sample of one hundred students in two schools that are not part of the selected schools for the main study. To further confirm the reliability of the instrument the participants' activities were subjected to Scott Pie inter-rating scale which gave a coefficient of 0.75.

3.5.5 Students' environmental knowledge test (SEKT)

The SEKT was mainly designed to measure students' knowledge of environmental education concepts in social studies curriculum. The instrument is developed by the researcher, and it consists of two sections. Section A seeks to obtain demographic data of the respondents such as age, gender, school, class, religion and ethnic background. Section B consists of 30 multiple choice test items. Each item has four options (A – D) from which respondents are to select the correct alternative. The test content covered the environmental education concepts selected from the JS II Social Studies syllabus for this study at the three levels of cognitive domain (Understanding, Remembering and Thinking) of the revised Bloom's taxonomy. This is because research (Olaajo, 2016; Adetoro, 2014; Ige, 2012; Dees, 2009; King, 2008; Falade, 2007; Aworanti and Abimbola, 1997) have shown that the Nigerian junior secondary school students may not be able to learn beyond these three categories. The table of specification for the construction of SEKT is presented in Table 3.1.

The developed instrument was given to experts in social studies with bias in environmental studies, their comments and observations were used to modify the test to ensure its contents and face validity. One Hundred (100) copies of the valid instrument were administered on junior secondary two (JSS II) students (environmental

conservation club members) outside the sample of the study. Their coded scores were subjected to Kuder-Richardson 20 which yielded a value of 0.73.

Table 3.1: Table of specification for students’ environmental knowledge test (SEKT) showing specific levels of domain

S/N	Content	Levels of Domain			Total
		Understanding	Remembering	Thinking	
1.	Environmental Resources	3(2,23,27)	4(1,3,28,30)	1(12)	8
2.	Pollution	3(3,6,24)	2(4,7)	1(15)	6
3.	Flooding	3(8,9,11)	1(10)	1(16)	5
4.	Deforestation	1(18)	2(21,29)	2(19,20)	5
5.	Solid Waste Management	3(14,25,26)	2(17,22)	1(13)	6
	Total	13	11	6	30

The test was scored manually; 1 mark was awarded for each correct option and zero for wrong option. This means that the total marks obtainable was 30.

3.5.6 Students’ environmental attitude questionnaire (SEAQ)

The instrument, SEAQ was adapted from Gbadamosi (2012) and it is designed to measure the disposition of the learners towards the environment. It is divided into two parts. The first part is aimed at obtaining information concerning the respondents’ demographic information such as their school, class, religion ethnic background and sex while the second part addresses students’ attitude to the environment. It consists of 25 items placed on a four-point Likert-scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) where students are to indicate the level of their disposition to the environment. Positively worded items would be scored 4, 3, 2 & 1 respectively while for negatively worded items, the scores would be reversed as 1, 2, 3 & 4.

The SEAQ instrument was given to experts in social studies for review and validity. After being confirmed valid, it was further trial tested with 100 JS II students who were not part of the participants in this study to ensure its reliability coefficient using Cronbach alpha technique which yielded a reliability value of 0.78.

3.5.7 Students' environmental practices questionnaire (SEPQ)

The students' environmental practices questionnaire was adapted from Gbadamosi (2015) with modification of some of the items and addition of 10 more items. It is a 25 item instrument patterned along 3-point Likert scale of Always, Sometimes and Never with 3, 2 and 1 points respectively. The instrument consists of two sections. Section A comprises the demographic data of the participants such as age, class, school name, sex and religion. Section B contains statements to measure environmental practices of the students. Positively worded items would be scored 3, 2 and 1 respectively while for negatively worded would be reversed as 1, 2 and 3.

In order to ensure both the face and content validity of the instrument, it was presented to two experts in environmental education, social studies education, language education and finally, to the researcher's supervisor for corrections on the suitability of the content and language of presentation. The corrected version was trial tested on a group of one hundred (100) JS II students in Oyo who were not part of the sample for the study. The data collected were used to calculate the reliability coefficient using Cronbach alpha which yielded a reliability value of 0.75.

3.6 Procedure for Data Collection

A letter of introduction was collected from the Head of Department, Arts and Social Sciences Education, University of Ibadan, to the school-based Environmental Conservation Club (ECC) coordinators both at the Department of Environmental Health Science (EHS), College of Medicine and Forest and Bird Conservation Section (FBCS), International Institute of Tropical Agriculture (IITA), Ibadan respectively; also, to the schools where the research was carried out. With this letter, the researcher sought and obtained the consent of the principals, teachers, club facilitators and JS II respondents of the participating schools. They were informed of the objectives and purpose of the study including the administration of the various questionnaire and test items. Adequate training was given to twelve research assistants (social studies teachers and club facilitators) on rating and scoring of the questionnaire and test items respectively. These preliminary activities took place for about three weeks.

The researcher was then assisted by the research assistants to administer the questionnaire and supervise the test. The administration and collection of SCPQ, SRBQ, SGRQ, SPECCAOS, SEKT, SEAQ and SEPQ last for about ten weeks. The

collection of the filled questionnaires and answered test items was done by the research assistants who have been briefed about the task. The marking and rating were done by the researcher and the research assistants. The rating was done through observation while conservation activities were taking place. Three raters observed participants in each of the selected schools. Their mean scores were used for final analysis.

3.7 Methods of data analysis

The data collected was analysed using Pearson's Product Moment Correlation Co-efficient (PPMCC), Multiple Regression Analysis (MRA), mean, frequency count, standard deviation and percentage. These were used to find out the combined and relative contributions of the independent variables on the dependent variables; that is, students' cultural practices, religious belief, home- location, gender-role and students' participation in environmental conservation club activities on the one hand and students' knowledge on, attitude to and practices in environmental related concepts in social studies on the other. Each of the research questions was tested at 0.05 level of significance.

CHAPTER FOUR
RESULTS AND DISCUSSION

This chapter has three sections: Section 4.1 presents the analysis of demographic data of respondents used in the study, section 4.2 presents the results of the study while section 4.3 presents discussion of findings of this study. The results and discussion are carried out based on the data analysed and in line with the research questions raised for the study.

Section 4.1: Analysis of demographic data

Table 4.1: Gender, Age and Tribe Distribution of the Respondents.

S/N	Item	Frequency	Percentage %
1	Gender		
	Male	488	42.9
	Female	649	57.1
	Total	1137	100.0
2.	Age		
	<12 years	115	10.1
	12-14 years	865	76.1
	> 14 years	157	13.8
	Total	1137	100.0
3.	Tribe		
	Hausa	39	3.4
	Igbo	112	9.9
	Yoruba	978	86.0
	No indication	8	0.7
	Total	1137	100.0

Table 4.1 shows that of 1137 respondents who took part in the study, 43% are male and 57% are female. This shows that the study is not gender biased. Also, 10% of the respondents could be considered under age because they were less than 12 years old, 76% was between age 12 and 14 which is the age bracket for students in JSS II and 14% was over age because they were already above 14 years. The three major tribes in Nigeria were represented in the study in that 3% was Hausas, 10% was Igbos and 86% was Yorubas. Only 1% failed to indicate their tribes. Figure 4.1 presents this information in pie chart.

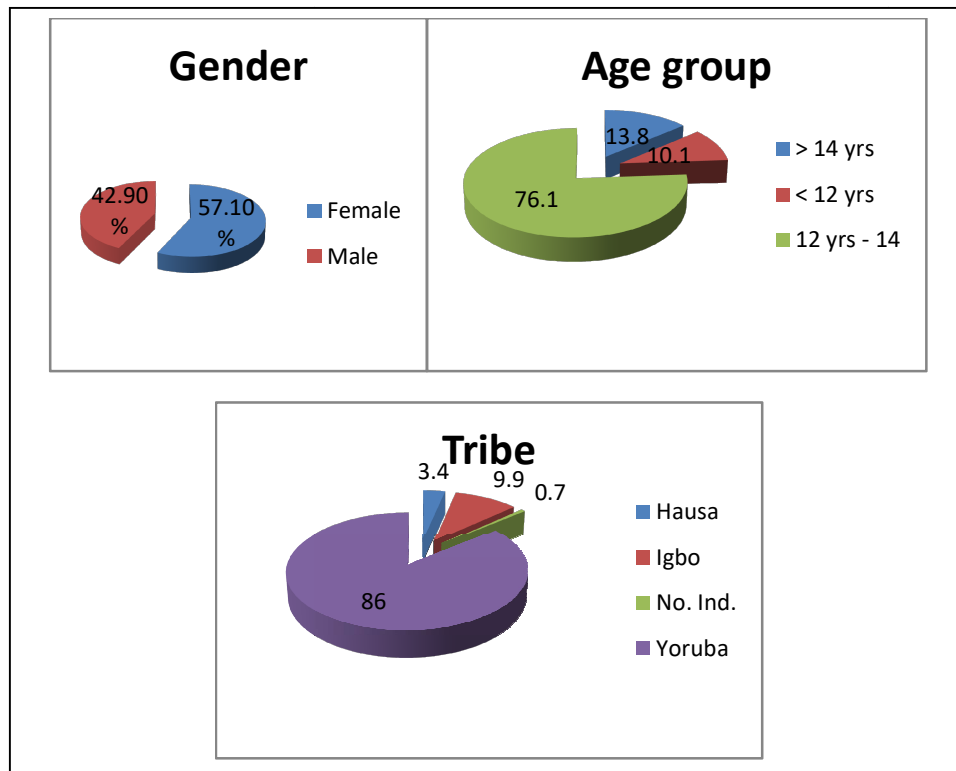


Figure 4.1: Pie Chart showing Gender, Age-group and Tribe of Respondents

Table 4.2: Home Location and Religion Affiliation of the Respondents

S/N	Item	Frequency	Percentage %
1	Home Location		
	High Density Area	898	79.0
	Low Density Area	239	21.0
	Total	1137	100.0
2.	Religion Affiliation		
	Christian	569	50.0
	Islam	544	47.9
	Traditional	23	2.0
	No Indication	1	0.1
	Total	1137	100.0

Table 4.2 reveals that, of the total participants in this study, 79% was from highly density areas while 21% was from low density area. Again, 50% was Christians,

48% was Muslims while 2% was traditional worshipers but only one person failed to indicate his/her religion affiliation. Figure 4.2 presents this in a chart form.

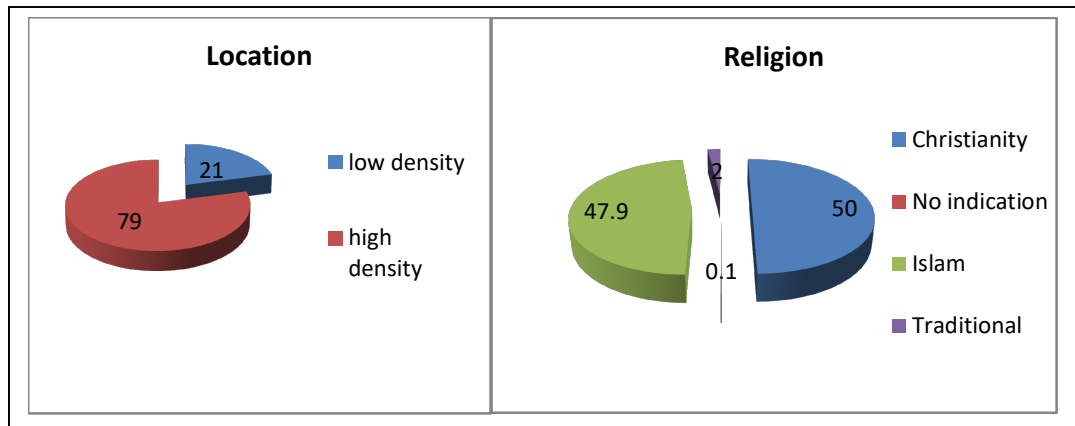


Figure 4.2: Pie chart showing home location and religion affiliation of respondents

Section 4.2: Answers to the research questions

Research Question 1(a): What relationship exists between the independent variables (students’ cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) and environmental knowledge?

To answer this question, a correlation matrix table containing the five independent variables (students’ cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) and one dependent variable (environmental knowledge) using the Pearson Product Moment Correlation Co-efficient (PPMCC) is presented in table 4.3(a).

Table 4.3(a): Correlation matrix table on the five independent variables and environmental knowledge

Variables	Environmental Knowledge	Cultural practices	Religious beliefs	Home location	Gender role	Participation in Environmental Conservation Club Activities
Environmental knowledge	1.000					
Cultural practices	0.080*	1.000				
Religious beliefs	0.140*	0.228	1.000			
Home location	0.386*	0.220	0.094	1.000		
Gender role	0.008	-0.022	0.204	0.058	1.000	
Participation in environmental conservation club activities	0.118*	0.070	0.056	0.389	0.095	1.000

*Correlation Coefficient has significant level less than 0.05

From table 4.3(a), students' cultural practices have positive weak and significant relationship with students' environmental knowledge ($r = 0.08$; $p < 0.05$). This means that the more students engage in cultural practices which are favourable to the environment and disengage from practices which are inimical to the environment, the better they have knowledge about their environment hence, their score in environmental knowledge test increases. There is a positive significant relationship between students' religious beliefs and their knowledge about the environment ($r = 0.14$; $p < 0.05$). This implies that though students' religious beliefs are related with their environmental knowledge but, the relationship is not strong. Also, students' home location has a significant positive and fairly relationship with students' environment knowledge ($r = 0.39$; $p < 0.05$).

The implication of this is that the more students live in an environment-friendly area, the better the students' knowledge of the environment. Moreover, the result shows that students' gender role has insignificant relationship with students' achievement scores in environmental related topics in Social Studies ($r = 0.01$; $p > 0.05$). This means that the roles carried out by either male or female students have no resultant effect on their environmental knowledge. However, students' participation in environmental conservation club activities has a positive significant relationship with

their environmental knowledge ($r=0.12$; $p < 0.05$). Students' participation in environmental conservation club activities is also noted as one of the factors that can improve students' achievement in environmental related topics in Social Studies.

Research Question 1(b): What relationship exists between the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) and environmental attitude?

Table 4.3(b): Correlation matrix table on the five independent variables and environmental attitude

Variables	Environmental Knowledge	Cultural practices	Religious beliefs	Home location	Gender role	Participation in Environmental Conservation Club Activities
Environmental knowledge	1.000					
Cultural practices	0.084*	1.000				
Religious beliefs	0.200*	0.228	1.000			
Home location	0.136*	0.220	0.094	1.000		
Gender role	0.121*	-0.022	0.204	0.058	1.000	
Participation in environmental conservation club activities	0.022	0.070	0.056	0.389	0.095	1.000

*Correlation Coefficient has significant level less than 0.05

Table 4.3(b) reveals that students' cultural practices have a positive weak and significant relationship with students' attitude to environment ($r = 0.08$; $p < 0.05$). It implies that students' cultural practices are related with their environmental attitude but, at a minimal level. Also, there is a significant positive relationship between students' religious beliefs and their environmental attitude ($r = 0.20$; $p < 0.05$). It means that students' religious belief is a factor which can have a resultant effect on students' attitude to the environment. Furthermore, students' home-location has a positive significant relationship with their attitude to the environment ($r = 0.14$; $p < 0.05$). This implies that students' home-location has a link with their environmental attitude though the linkage may not be strong enough. It could also be observed that there is a positive weak and significant relationship between students' gender role and students'

environmental attitude ($r = 0.12$; $p < 0.05$). This indicates that students' gender-role is also related with their attitude to the environment but, at a low level. Finally, the result shows insignificant relationship between students' participation in environmental conservation club activities and students' attitude to environment ($r = 0.02$; $p > 0.05$). This means that though students' participation in environmental conservation club activities is related to students' environmental attitude but, at a very low level.

Research question 1(c): What relationship exists between the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) and environmental practices?

Table 4.3(c): Correlation matrix table on the five independent variables and environmental practices

Variables	Environmental Knowledge	Cultural practices	Religious beliefs	Home location	Gender role	Participation in Environmental Conservation Club Activities
Environmental knowledge	1.000					
Cultural practices	0.077*	1.000				
Religious beliefs	0.092*	0.228	1.000			
Home location	0.081*	0.220	0.094	1.000		
Gender role	0.023	-0.022	0.204	0.058	1.000	
Participation in environmental conservation club activities	0.086*	0.070	0.056	0.389	0.095	1.000

*Correlation Coefficient has significant level less than 0.05

From table 4.3(c), students' cultural practices have a positive weak and significant relationship with students' environmental practices ($r = 0.08$; $p < 0.05$). This indicates that students' involvement in favourable environmental cultural practices has resultant effect on their environmental practices though at a minimal level. Moreover, there is a positive significant but weak relationship between students' religious beliefs and their practices in the environment ($r = 0.09$; $p < 0.05$). This means that students' religious beliefs and students' environmental practices are related but the relationship is

not a strong one. Also, students' home location has a positive weak and significant relationship with students' environmental practices ($r = 0.08$; $p < 0.05$). It implies that students' home location is not strong enough to really relate with students' environmental practices. However, students' gender-role has no significant relationship with their environmental practices ($r = 0.02$; $p > 0.05$). It means that the gender roles that students perform do not have meaningful effect on their practices in the environment. Furthermore, the result shows that students' participation in environmental conservation club activities has positive weak and significant relationship with students' environmental practices ($r = 0.09$; $p < 0.05$). This implies that students' participation in environmental conservation club activities and students' environmental practices are related though, the relationship is a low one.

Research question 2(a): what is the composite contribution of the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) to the students' environmental knowledge?

Table 4.4(a): Summary of multiple regression analysis showing composite contribution of all the independent variables on students' environmental knowledge

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	2806.572	5	561.314	44.246	.000b
	Residual	14348.119	1131	12.686		
	Total	17154.691	1136			
R = 0.404		R ² = 0.164		Adjusted R ² = 0.160		

Table 4.4(a) shows that all the independent measures (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) have a relationship with students' environmental knowledge ($R = 0.40$). This implies that all independent measures are variables to put into consideration when predicting students' environmental knowledge. Still on the table, the independent measures have a significant ($F_{(5,1131)} = 44.25$; $p < 0.05$) composite contribution to the dependent measure with an adjusted R^2 value 0.160. This leads to the fact that the independent variables accounted for 16% of the

variance observed in the environmental knowledge. Therefore, the composite contributions of independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) on the dependent variable (environmental knowledge) is significant.

Research question 2(b): What is the composite contribution of the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) to the students' environmental attitude?

Table 4.4(b): Summary of multiple regression analysis showing composite contribution of all the independent variables on students' environmental attitude

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3123.321	5	624.664	14.985	.000b
	Residual	47145.578	1131	41.685		
	Total	50268.899	1136			
R = 0.249 ^a		R ² = 0.062		Adjusted R ² = 0.058		

Table 4.4(b) reveals that all the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) have a relationship with students' environmental attitude (R = 0.25). This means that all independent measures are variables to put into consideration when predicting students' environmental attitude. Furthermore, the independent measures have a significant ($F_{(5,1131)} = 14.99$; $p < 0.05$) composite contribution to the dependent measure with an adjusted R² value 0.058. This indicates that independent measures contributed 5.8% to the total variance of students' environmental attitude. Therefore, the composite contribution of independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) on the dependent variable (environmental attitude) is significant.

Research question 2(c): What is the composite contribution of the independent variables (students' cultural practices, religious beliefs, home location, gender role and

participation in environmental conservation club activities) to the students' environmental practices?

Table 4.4(c): Summary of multiple regression analysis showing composite contribution of all the independent variables on students' environmental practices

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2438.197	5	487.639	4.393	.001 ^b
	Residual	125546.992	1131	111.005		
	Total	127985.189	1136			
R = 0.138 ^a		R ² = 0.019		Adjusted R ² = 0.015		

From table 4.4(c), the result shows that all the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) have a relationship with students' environmental practices (R = 0.14). This implies that all independent measures are variables to put into consideration when predicting students' environmental practices. Moreover, the independent measures have a significant ($F_{(5,1131)} = 4.39$; $p, 0.05$) composite contribution to the dependent measure with an adjusted R² value 0.015. This leads to the fact that the independent variables accounted for 1.5% of the variance observed in the environmental practices. Therefore, the composite contribution of independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) on the dependent variable (students' environmental practices) is significant.

Research question 3(a): What are the relative contributions of each of the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) to the students' environmental knowledge?

Table 4.5(a): Relative contributions of all the independent variables to students' environmental knowledge

Variables	Unstandardized Coefficients		Standardized Coefficients	Ranking	t	Sig.
	B	Std. Error	beta			
(constant)	12.556	2.517			4.989	.000
Students' cultural practices	-0.14	.012	-.034	5th	-1.170	.242
Students' Religious beliefs	.057	.014	.120	2nd	4.181	.000*
Students' Home-location	3.809	.288	.400	1st	13.220	.000*
Students' Gender-role	-.016	.012	-.037	4th	-1.320	.187
Students' Participation in environmental conservation club activities	-.071	.055	-.038	3rd	-1.296	.195

Dependent Variable: Environmental Knowledge

Table 4.5(a) reveals that students' home location ($\beta = 0.40$; $t = 13.22$; $p < 0.05$) and students' religious beliefs ($\beta = 0.12$; $t = 4.18$; $p < 0.05$) have a significant relative contribution to the students' environmental knowledge. However, the table indicates that students' participation in environmental conservation club activities ($\beta = -0.04$; $t = -1.30$; $p > 0.05$), students' gender-role ($\beta = -0.03$; $t = -1.32$; $p > 0.05$) and students' cultural practices ($\beta = -0.03$; $t = -1.17$; $p > 0.05$) have no significant relative contribution to students' environmental knowledge.

The implication of this result is that students' home location is a strong predictor of students' environmental knowledge. Similarly, students' religious beliefs is a variable to reckon with as a predictor of students' environmental knowledge. On the other hand, students' participation in environmental conservation club activities does not necessarily determine their achievement scores in environmental related topics in Social Studies. Also, carrying out of certain roles as a male or female student in the environment does not necessarily influence the environmental knowledge of students. Similarly, the involvement of students in certain cultural practices does not hinder neither does it give any meaningful impact to their environmental knowledge.

Research question 3(b): What are the relative contributions of each of the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) to the students' environmental attitude?

Table 4.5(b): Relative contributions of the independent variables to students' environmental attitude

Variables	Unstandardized Coefficients		Standardized Coefficients	Ranking	t	Sig.
	B	Std. Error	beta			
(constant)	44.366	4.563			9.724	.000
Students' cultural practices	.016	.022	.022	4th	.740	.459
Students' Religious beliefs	.136	.025	.168	1st	5.541	.000*
Students' Home location	2.105	.522	.129	2nd	4.030	.000*
Students' Gender role	.062	.022	.084	3rd	2.845	.005*
Students' Participation in environmental conservation club activities	-.149	.100	-.047	5th	-1.496	.135

Dependent Variable: Environmental Attitude

Table 4.5(b) shows that students' religious beliefs ($\beta = 0.17$; $t = 5.54$; $p < 0.05$), students' home-location ($\beta = 0.13$; $t = 4.03$; $p < 0.05$) and students' gender-role ($\beta = 0.08$; $t = 2.85$; $p < 0.05$) have a significant relative contribution to the students' environmental attitude. On the other hand, the table reveals that students' cultural practices ($\beta = 0.02$; $t = 0.74$; $p > 0.05$) and students' participation in environmental conservation club activities ($\beta = -0.05$; $t = -1.50$; $p > 0.05$) have no significant relative contribution to students' environmental attitude.

This result implies that the religious beliefs of students is conveniently capable of predicting students' attitude to the environment. Also, students' home-location and students' gender-role are predictors of students' environmental attitude. In contrary, students' involvement in certain cultural practices in the environment is not strong enough to either serve as a constraint or add weight to students' environmental attitude. Moreso, the participation of students in environmental conservation club activities in the school does not necessarily appeal to the emotional feelings of students as regards the environment.

Research question 3(c): What are the relative contributions of each of the independent variables (students’ cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) to the students’ environmental practices?

Table 4.5(c): Relative contributions of the independent variables to students’ environmental practices

Variables	Unstandardized Coefficients		Standardized Coefficients	Ranking	t	Sig.
	B	Std. Error	βeta			
(constant)	24.507	7.445			3.292	.001
Students’ cultural practices	.053	.035	.047	3rd	1.508	.132
Students’ Religious beliefs	.096	.040	.074	1st	2.385	.017*
Students’ Home location	1.023	.852	.039	4th	1.201	.230
Students’ Gender role	.001	.035	.001	5th	.030	.976
Students’ Participation in environmental conservation club activities	.321	.163	.063	2nd	1.974	.049*

Dependent Variable: Environmental Practices

From table 4.5(c) students’ religious beliefs ($\beta = 0.07$; $t = 2.39$; $p < 0.05$) and students’ participation in environmental conservation club activities ($\beta = 0.06$; $t = 1.97$; $p < 0.05$) have a significant relative contribution to the students’ environmental practices. But according to the table, students’ cultural practices ($\beta = 0.05$; $t = 1.51$; $p > 0.05$), students’ home-location ($\beta = 0.04$; $t = 1.20$; $p > 0.05$) and students’ gender-role ($\beta = 0.00$; $t = 0.03$; $p > 0.05$) have no significant relative contribution to students’ environmental practices.

This result indicates that the religious belief of students is a predictive variable that can either be a hinderance or catalyst to students’ environmental practices. Participation of students in environmental conservation club activities is also noted to be a predictor of their environmental practices. On the other hand, students’ cultural practices do not really affect their practices in the environment. Moreover, students’ home location and students’ gender role are not strong to influence students’ environmental practices.

Research questions 4(a): Which of the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) would predict students' environmental knowledge?

Table 4.5(a) indicates the relative contributions of the independent variables to the prediction of the students' environmental knowledge at different levels and ranks as expressed by the t-values.

According to table 4.5(a) students' home location ($\beta = 0.40$; $t = 13.22$; $p < 0.05$) and students' religious beliefs ($\beta = 0.12$; $t = 4.18$; $p < 0.05$) are the only variables that have significant relative contributions towards students' environmental knowledge. Therefore, it is only these two independent variables that can predict students' environmental knowledge. The prediction equation is given by:

$$X = C + a_1b_1 + a_2b_2$$

Where X denotes Environmental Knowledge (EK)

C denotes constant

b_1 denotes religious belief (RB)

b_2 denotes home location (HL) and

a_1 and a_2 are the coefficients of b_1 and b_2 respectively.

Therefore the prediction equation is, $EK = 12.56 + 0.06RB + 3.81HL$

Research question 4(b): Which of the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) would predict students' environmental attitude?

Table 4.5(b) shows the relative contributions of the independent variables to the prediction of the students' environmental attitude at different levels and ranks as expressed by the t-values.

According to table 4.5(b), three independent variables, that is religious belief ($\beta = 0.17$; $t = 5.54$; $p < 0.05$), home location ($\beta = 0.13$; $t = 4.03$; $p < 0.05$) and gender-role ($\beta = 0.08$; $t = 2.85$; $p < 0.05$) have significant relative contributions towards students' environmental attitude. Therefore, it is only these three independent variables that can predict students' environmental attitude. The prediction equation is given by:

$$Y = C + a_1b_1 + a_2b_2 + a_3b_3$$

Where Y denotes Environmental Attitude (EA)

C denotes constant

b_1 denotes religious belief (RB)

b_2 denotes gender-role (GR)

b_3 denotes home-location (HL) and

a_1, a_2 and a_3 are the coefficients of b_1, b_2 and b_3 respectively.

Therefore the prediction equation is, $EA = 44.37 + 0.14RB + 0.06GR + 2.11HL$

Research Question 4(c): Which of the independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) would predict students' environmental practices?

Table 4.5(c) shows the relative contributions of the independent variables to the prediction of the students' environmental practices at different levels and ranks as expressed by the t-values.

According to the table 4.5(c) it is only students' religious beliefs ($\beta = 0.07$; $t = 2.39$; $p < 0.05$) and students' participation in environmental conservation club activities ($\beta = 0.06$; $t = 1.97$; $p < 0.05$) that have significant relative contributions towards students' environmental practices. Therefore, it is only these two independent variables that can predict students' environmental practices. The prediction equation is given by:

$$Z = C + a_1b_1 + a_2b_2$$

Where Z denotes Environmental practices (EP)

C denotes constant

b_1 denotes religious belief (RB)

b_2 denotes participation in environmental conservation club activities (PECCA) and

a_1, a_2 are the coefficients of b_1, a_2 respectively.

Therefore the prediction equation is, $EP = 24.51 + 0.10RB + 0.32P$.

4.3 Discussion of findings

4.3.1 Students' cultural practices and their environmental knowledge

The finding of this study showed that there was a significant relationship between students' cultural practices and their environmental knowledge. This result might be confirming the fact that cultural practices which include a broad range of activities concerning nature and the universe greatly influence students' knowledge

about the environment. The involvement of students in various cultural practices especially the environment related activities exposes them to certain ideas, facts which make them to know more about the natural environment. Culture provides explanation on the existence and relevance of natural phenomena especially to human beings, and as a result of this, spells out the type of relationship that should take place between human being and environment. Though, culture is rich in providing environmental information, but these ideas and facts about the environment can be easily gotten through active involvement of people in such environment related cultural practices. For instance, a student who helps his traditional herbal doctor father in preparing herbal mixture tends to have a fair knowledge about vegetation – plants, flowers, shrubs and trees including their relevance to human health and survival. Moreover, all cultures cherish cleanliness - body and home hygiene are taken to be germane. As students engage in different household cleaning activities - sweeping of rooms in the home and its environment, washing of plates and other kitchen utensils, among others, they know more about what cleanliness entails and its relevance to environmental health and safety. Therefore, students who actively engage in different cultural activities especially those ones related to environment tend to perform better in achievement test on environmental concepts. This study therefore advises the curriculum planners to put students' cultural beliefs and practices into consideration when developing curriculum especially in Social Studies. Similarly, teachers should encourage cultural practices which are favourable to the environment among the students in order to improve their environmental knowledge.

A child's cultural belief and practices as regards a particular environmental issue or topic largely affect his learning of that topic no matter the strategies used by a teacher to make learning take place. This means that the students' cultural beliefs and practices need to be seriously examined as regards their achievement in environment related concepts in Social Studies. This finding corroborates Arbuthnot and Lingg (1985); Michael, Roy, Chankon and Thomas (1996); Oyemade, Omokhodion, Olawuyi and Sridhar (2009); and that of Ebong (2014) whose studies revealed that there is a positive significant relationship between students' cultural practices and their environmental knowledge.

4.3.2 Students' cultural practices and their environmental attitude

The finding of this study revealed that there was a positive significant relationship between students' cultural practices and their attitude to environment. This indicates that students' cultural practices have influence on the students' attitude to environment. This result might be connected with the fact that students' cultural practices largely determine their disposition towards the environment. This might have informed Onyeabochukwu (2010) who opines that cultural practices of people not only affect their health, but also affect all their affairs with the environment. A student who is already used to keeping his environment neat by disposing of dirt only inside waste bins tends to appreciate and value aesthetic environment unlike his counterpart, who always finds it convenient to dispose of dirt either in drainage, open land or building under construction. Hence, his stewardship attitude to the environment becomes poor. Therefore, variations in cultural practices explain reasons why there are variations in students' dispositions to the environment.

The more students engage in a number of environmental culture-related practices, the more and better they develop favourable feelings towards their environment. The best way of developing responsible and desirable environmental attitude in the young ones is by actively involving them in those activities which can help in enhancing their feelings. This is so because attitude is not like any other concepts which can be taught and taken "hook-line-and-sinker", they are better developed by exposing children to certain activities capable of building and developing favourable feelings which later lead to the formation of desirable attitudes. There are many cultural practices which are environment-friendly that is, students in this study confirmed the fact that such activities help in creating environmental concern and feelings. A child that is always involved in environmental cleaning tends to appreciate cleanliness, and through this, has soft spot for environmental care and protection. This perhaps explains the reason why female gender seems to better environmental attitude compared with the male gender.

This result is in line with that of Maineri, Barnett and Valdero (2001) whose results of hierarchical multiple regression analyses supported the hypotheses under study: specific cultural beliefs and practices predicted several green-buying behaviours and attitudes of 201 respondents in 8 middle-class communities in Los Angeles, followed by economic status, awareness about the environmental impacts of products and demographic variables of consumers respectively. Moreover, a cross-cultural study

on American and Chinese consumers' environmental attitudes show that there is a significant difference in the environmental attitudes of the two cultural groups with the Chinese group having higher mean score than the American group.

However, Adelekan (2016) reports that peoples' cultural practices relatively contribute to their environmental attitude. This means that the display of negative cultural practices by people (students inclusive) might hinder their feelings and dispositions to environment because attitudes are formed as a result of certain learning experiences. Teachers (especially Social Studies teachers) should therefore develop favourable environmental attitude in their students by encouraging their involvement in favourable cultural environmental practices.

4.3.3 Students' cultural practices and their environmental practices

The result of this study indicates that there was a significant relationship between students' cultural practices and their practices in the environment. This finding shows that students' cultural practices are related with students' environmental practices. This result might emanate from the fact that culture is at the basis of all human actions. Students' cultural practices influence their behaviour and actions toward the environment. Cultural practices which have to do with the students' traditional ways of life can influence their environmental health practices especially in Ibadan. This result is not unexpected as "practices make perfection". When cultural environmental practices are carried out on daily basis, these go a long way in having effect on environmental activities as well. This is the reason why authorities should endeavor to encourage those cultural practices which are related to the demonstration of good environmental practices and discourage those that are inimical to the environment. Cultural practices such as; taking permission from soil before digging it regardless the purpose of doing so, warning against pouring of hot water on the land, discouraging felling of trees and beating of bush, and even, diverse cultural songs and taboos encouraging personal and home sanitation are environment-friendly practices while colloquial cultural practices such as indiscriminate dumping of refuse, open deformation, illegal cutting of trees, erecting buildings on river banks and channels especially in urban area, are threats to the environment.

The study of Oladepo and Sridhar (2012) supports the result of this study. They studied people's traditional practices among the major ethnic groups in Nigeria and found that people's traditional practices promoted good environmental and

complemented modern environmental promotion efforts. According to them, folklores and songs emphasize sanitary disposal of human waste, general cleanliness and the importance of personal hygiene. The finding of Ogunade (2007) also corroborates the result of this study. Ogunade's study compared the Yorubas' cultural practices and their environmental practices. It was discovered that the Yorubas' cultural practices are environment friendly.

However, in recent times, a sort of cumulative culture created by people based on their daily living conditions and social lifestyles determine the kind and level of relationship that exist between the people (students inclusive) and the environment. No wonder, the result of this study reveals that though there was a relationship between students' cultural practices and their environmental practices but, the relationship was a weak one ($r = 0.08$; $p < 0.05$). Oladiti and Ajiboye (2012) and Adelekan (2016) support this finding by adding that colloquial cultural practices such as illegal dumping of refuse into any nearby stream or river, drainage, open land, road sides and median, building under construction or dilapidated one, burning or burying of refuse, etcetera which students involve in make their relationship with environmental practices not to be strong enough.

4.3.4 Students' religious beliefs as correlate of their environmental knowledge

Students' religious belief as found in this study has a significant relationship with students' environmental knowledge though, at a low level. This result is not surprising because religion which is seen as a system of belief(s) gives nature a variety of spiritual, moral and cultural meanings, and describes human's position in nature together with what they are to know about the environment. No wonder, differences in students' religious beliefs led to the varied environmental knowledge scores realised from the Environmental Knowledge Test (EKT) administered on them. That is, students view and attempt environment-related questions from religious perspectives.

Religion which is a system of belief determines environmental ethnics. Hence, differences in religion lead to the manifestation of varied environmental ethics. A child's religious belief greatly determines the way and manner in which he perceives the environment and how he should relate with his environment. Any idea or information about the environment which contradicts his religious belief is rejected that is, he refuses to learn such idea. This however explains the reason why students in this study got different scores in the "Students' Religious Beliefs Questionnaire" items

given to them. Each religion has its own body of knowledge as regards the concept of environment and other environment-related issues. It is imperative to say it here that despite the differences in environmental views and ideas among the three major religions in Nigeria, participants in the study displayed certain degrees of environmental knowledge as measured by “Students’ Environmental Knowledge Test” (SEKT).

The finding of this study is in support of findings of Feyisetan, Asa and Ebigbola (2004); Hope and Jones (2014) and Funk and Kennedy (2016) that religious beliefs have significant relationship with people’s (including school children) environmental knowledge. Similarly, the relationship tends to be low as they resist any form of environmental knowledge that is outside their religious faith. Hence, students’ religious beliefs are related with their achievement scores in environmental related concepts in Social Studies.

However, this study negates the finding of Duan and Joseph (2010) who found that there is a negative relationship between people’s religious beliefs and their environmental knowledge. To them, modernization and westernization tend to influence people’s knowledge as regards the environment.

4.3.5 Students’ religious beliefs as correlate of their environmental attitude

The result of this finding showed that there was a significant relationship between students’ religious beliefs and students’ environmental attitude. This could be attributed to the fact that religion which is described as a unified belief system appeals firstly to students’ feelings, thought and emotions toward a particular thing (living and non-living) or issues. A student’s predisposition towards the environment for instance, determines his/her behaviour to such an environment. A student that has the thought of environmental stewardship will always derive happiness in taking good care of his environment at home, school or any other places where he finds himself.

This result was expected based on the fact that religious belief appeals most to psychological state of mind. It has to do with people’s feelings as regards an issue or object. Such feelings might be in positive or negative form. Feelings mostly lead to the formation and development of attitude. Once an attitude is formed, it determines one’s behaviour. People’s religious beliefs to a large extent affect their attitudes towards the environment. A person’s feelings about the environment determine his/her behaviour towards such environment. Some religious adherents believe that taking good care of

the environment is a task they must do as total obedience to God's instruction while some have contrary view. To them, environment is created for man and not the other way round hence, man can do whatsoever that pleases him to the environment. The children who claim the religions of their parents also have these varied views as discovered in the study.

This result is in tandem with the findings of Whitford and Wong (2009); Loris and Michael (2009); Kazz (2010); Gardner (2013 and McGrath (2013) who reported that all religious beliefs stress the need for environmental ethics within which human's relationship with his environment is defined and that such ethics are pro-environmental in nature leading to the development of favourable environmental attitude among the faithfuls.

In contrary, Guth (1995) and Hope and Jones (2014) established that religious belief is not correlated with people's environmental concern as the secular (non-religious) participants expressed more feelings to environmental issues than the religionists. To them, belief in afterlife and divine intervention accounted for this finding.

4.3.6 Students' religious beliefs as correlate of their environmental practices

The findings of this study revealed a significant relationship between students' religious beliefs and students' environmental practices. This might occur because religious belief which influences students' feelings as regards nature also guides their behaviour and actions towards such nature. This means that a student with the spirit of environmental stewardship sees the care of home and school environments as divine responsibility and not just because he is ordered to do so by his parents or teachers. This finding is in line with that of Oyemade; Omokhodion, Olawuyi and Sridhar (2009); Oladepo and Shridhar (2012). Their studies pointed it out that certain religious beliefs influence people's environmental care-seeking behaviour and actions. Therefore, to ensure good environmental practices among students the students' pro-environmental religious beliefs need to be improved.

The result of this study contradicts that of Duan and Joseph (2010) who are of the view that people's religious beliefs do not correlate with their environmental practices. To them, people's home location and western education attributed to this.

4.3.7 Students' home location and their environmental knowledge

From this study, students' home location has a significant relationship with students' environmental knowledge. Housing quality as well as the quality of the environment in which a student's home is sited possibly affect his environmental consciousness and knowledge. A student who lives in low density area (planned area) for instance, has access to potable water, conveniences (toilet and bath), clean air, solid waste disposal facility and good road networks. All these expose him to certain environmental practices which improve his environmental hygiene knowledge and other environmental issues which invariably influence his achievement scores in environmental knowledge test in school. Information obtained from related studies (Olaajo, 2016; Durojaiye, 2015; Bolu-Steve and Sanni, 2013; and Gbadamosi, 2012) confirm the result of this study by reporting that students from planned areas have better environmental knowledge with which they solve environmental problems than their counterparts in an unplanned setting.

However, the result of the findings of Ebong (2014) is in contrast with this study as he reported that there was no significant difference in the knowledge mean scores of students in both planned and unplanned home location. This might be due to the exposure of students to the teaching and learning of environment- related concepts in school's subjects and their active participation in environmental conservation club activities in school.

4.3.8 Students' home location and their environmental attitude

The result of this study showed that there was a significant relationship between students' home location and students' environmental attitude. This might be due to the important role played by home and its environs in the life of a student. The quality of students' home environment helps in building the personality of such student and makes him what he is. No wonder, several studies (Coker, Awokola, Olomolaiye and Booth, 2007; Tilbury, 1994; Wilson, 1994) pointed out the fact that unless a child develops a sense of admiration and concern for the environment during their formative years, they then stand the risk of not developing such attitudes in later years. For instance, a student whose home is located in a planned residential area tends to appreciate hygienic and aesthetic environment. Hence, he becomes an environmental friendly child. He feels bad throwing litters on the floor and seeing refuse inside drainage, open land, among others. In contrary, a student from an unplanned area

characterized by dirty, noisy traffic, noisy sound of machines from plywood industry and market square may not appreciate a clean and quiet environment.

4.3.9 Students' home location and their environmental practices

The finding of this study revealed that there was a significant relationship between students' home location and students' environmental practices. This might be so as where one lives largely influence the kind of environment-related activities that one is likely to engage in. A student from environment with good sanitary conditions is to a large extent likely to demonstrate good environmental practices. He hardly disposes of refuse on open land, drainage, or road side. Whereas, the value of waste bins is meaningless to a student who is from poor sanitary area (high density area) since he can conveniently dispose of dirt either in drainage, building under construction or even an open land very close to his house. He loves tuning electronics into its highest volume since he is already used to noisy environment. This finding is in line with the study of Ebong (2014) on the influence of home location on the environmental health knowledge and practices of secondary school students in Zaria. He found that there was significant difference in the environmental practice mean scores of the two schools used for the study. He pointed out that adequate opportunities and sanitation facilities provided at homes of students from urban located school allowed them to demonstrate good environmental practices than their counterparts from peri-urban located school.

On the contrary, Adeoye (2013) argues that a child's home environment is not a strong predictor of his environmental practices as schooling and other factors could develop in him desirable environmental practices.

4.3.10 Students' gender roles as correlate of their environmental knowledge

The result of this study indicated that there was no significant relationship between students' gender roles and students' environmental knowledge. This implies that the traditional or cultural roles performed by both male and female students are not strong enough to influence their environmental knowledge. This might emanate from the fact that the effectiveness of other factors like students' academic ability, teacher's teaching strategies, students' participation in environmental conservation club activities, among others might have attributed to this result. Besides, application of gender sensitivity seems to be weak among children. In some homes and schools, both girls and boys sweep, wash, clean, dispose dirt, among others. This result corroborates

with Wang and Cheng (2010), Nkire (2011), Oladapo (2012), Gbadamosi (2012) and Gbadamosi (2015) whose studies established that gender role factor has no significant relationship with participants' environmental knowledge.

However, the result of this study contradicts Macdonald and Hava (2010), Ogunbode and Arnold (2012) and Olatundun and Adu (2013) whose studies reported that gender has significant relationship with students' environmental knowledge.

4.3.11 Students' gender roles as correlate of their environmental attitude

Students' gender roles as found in this study has a significant relationship with students' environmental attitude. This result is not surprising because culturally, females are brought up to be family nurturers and caregivers. The nurturing attitudes that result from this socialization are translated into attitude towards nature and environment and thus, more protective than that of their male counterparts. In support of this result, many studies have confirmed that females have higher environmentally conscious attitude than males. Sharbbier (2006) for instance revealed that there is a significant relationship between students' gender-roles and their environmental attitude scores. Similarly, Fapojuwo (2015) states that there is a significant difference in the attitude of male and female pre-service and in-service Social Studies teachers towards environmental education concepts.

In contrast, Kumar and Patil (2007) revealed that there is no significant relationship between students' gender-roles and their attitudes toward environmental pollution and related issues.

4.3.12 Students' gender roles as correlate of their environmental practices

From this study, students' gender role has no significant relationship with students' environmental practices. This implies that the traditional roles carried out by both male and female students in relation with environment are not strong enough to really relate or influence their environmental practices. It means that students' performance of certain gender roles is not the reason why there is increase in their environmental practices but other factors could be attributed to this. This might emanate from the fact that students' home location, religious-belief, cultural practices and participation in environmental conservation club activities affect students' practices in relation to environment than gender-roles performed by the students. This finding corroborates Nkire (2011); Oladapo (2012) and Oyewale (2015) who in their separate

studies in environmental education found that gender-role has no significant effect on participants' environmental practices.

The outcome of this study negates Obodumu, Ogbo and Utulu (2010) and Wahab (2014) whose studies discovered that gender role has significant relationship with environmental practices especially, female gender.

4.3.13 Students' participation in environmental conservation club activities as correlates of their environmental knowledge

The result of this study revealed that there was a significant relationship between students' participation in environmental conservation club activities and students' environmental knowledge. This result might be connected with the fact that students' collaborative activities, informal and tension free atmosphere that allowed students' active involvement in the teaching and learning process which is beyond the normal conventional classroom instruction attributed to this. When the right learning experiences are made available for students then, they conveniently form their own knowledge using these ideas. Such activities provide concrete, active learning experience and relevant information beyond classroom learning activities and also give students the opportunity to develop the initiative for communicative competence and other skills needed to become life-long learners (Afolabi, 2008; Salako, 2014). The more students participate actively in environmental club activities, the more students' achievement in environmental related concepts in Social Studies. This result is in support of findings of Ana, Oloruntoba and Sridhar (2009); Bradley, Waliczek and Zajire (2010) and Harrison, Bisong, Akintoye and Ukata (2015) that there is a significant relationship between students' participation in environmental club activities and students' environmental knowledge. They reported that students' environmental knowledge scores increased after their involvement in the club's programmes.

However, this result contradicts the finding of Benson (2011) who argues the positive effect of students' participation in environmental conservation club activities and academic achievement and submits that the level of academic achievement through students' participation in environmental club activities depends on the mode of organization and supervision of the club.

4.3.14 Students' participation in environmental conservation club activities as correlates of their environmental attitude

The finding of this study showed that there was no significant relationship between students' participation in environmental club activities and students' environmental attitude. It means being an active member of environmental conservation club does not increase or decrease a student's caring attitude or feelings toward the environment. This might be as a result of other factors which may tend to be stronger in relating with students' environmental attitude. For instance, students' religious beliefs, home location, gender roles and cultural practices might be stronger in improving students' attitudes toward environment than their participation in environmental conservation club activities. This finding supports the views of Adepoju (2003) and Benson (2011) who argue that the issue of membership and participation in environmental conservation club activities as it affects learning outcomes in environment related subjects depend on how "active" the club is in the school, ownership status (public or private owned) of the school having the club, mode of organization and supervision of the club, student-related factors, among others.

In contrast, findings of Kioko, Kiringe and Wahungu (2011), Palmberg and Kuru (2011) in their separate studies reveal that students who participate in environmental conservation club activities have a stronger relationship with nature and exhibit better environmental feelings and higher moral judgements than those who are not exposed to such activities.

4.3.15 Students' participation in environmental conservation club activities as correlates of their environmental practices

The finding of this study indicated that students' participation in environmental conservation club activities has a significant relationship with students' environmental practices. This result is not surprising as the mission statement of school's environmental conservation club is to nurture young ones in environmental health ethics and practices. As it is known that it is difficult to change attitudes and practices overnight, the active participation of students in the club activities like recycling of materials, picking litters and other dirts in the school compound, planting trees and flowers, holding environmental debates, sensitizing others about the environment, among others helps them to develop and exhibit good environmental practices not only in the school but at home and any other place they find themselves. And it has been

observed that most environmental problems encountered in Ibadan are as a result of bad environmental practices of people. Adults use children to carry out most of these practices (illegal dumping of refuse on open places, drainages, road-sides and median, burning of refuse, etc.) but as these children participate in schools environmental club activities, they enlighten their parents on good environmental practices.

This result is in line with the findings of Ana (2009); Chinatu (2012); Ramchandra (2013); Harrison, Bisong, Akintoye and Ukata (2015) who reported that participation of students in environmental conservation club activities make their homes and schools more environment-friendly by adopting environment-friendly practices as well as preserving resources such as water and electricity. To them, the club serves as a forum through which member students reach out to influence, engage their parents and neighbourhood communities to promote better environmental behaviour and practices.

4.3.16 Composite contribution of the independent variables to students' environmental knowledge

This study reported that the composite contribution of students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities to the prediction of students' environmental knowledge was significant. The result of this finding is expected given the fact that these independent variables are sociocultural factors which are also student related variables that can catalyse students' interest to greater academic achievement. Also, this could be as a result of the fact that these variables are interconnected to students' learning experiences. The participation of students in environmental conservation club activities is not only relevant to the teaching and learning of environmental related concepts alone but, relevant to other variables in the study. That is, students from various cultures, religious backgrounds, residential areas (planned and unplanned) and of gender types (male and female) who are members of the club share varied views as regards the concept of environment, and through this enrich their knowledge about environment. This study is in support of Schuitz (2002) who reported a strong positive contribution of the students' related variables to the students' environmental knowledge. Similarly, Durojaiye (2015) reported that differences in students' socio-cultural variables explain their varied performances in environmental related topics test in school. However, this study negates the submission of Ebong (2014) whose study

revealed that there was no relationship between students' related variables and their environmental knowledge.

4.3.17 Composite contribution of the independent variables to students' environmental attitude

The study reported that the composite contribution of students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities to the prediction of students' environmental attitude was significant. Though the contribution was small, but the fact that the independent variables are germane to students' environmental attitude has been established by the study. The joint positive relationship and contribution of all the independent variables on students' attitude towards environment might not be unconnected with the fact that the independent variables are students'-related variables as well as socio-cultural variables which are central to students' learning outcomes. The result of this finding corroborates the report of Schultz (2002) who found a strong positive contribution of the students' related variables to the students' environmental attitude. Durojaiye (2015) in his own study also discovered that differences in students' socio-cultural variables explain their varied attitude towards the environment. However, the smallness of the joint contribution of these independent variables in prediction of students' environmental attitude might be due to the poor organization and supervision of the activities of the school's environmental conservation club, students' involvement in negative environmental cultural practices, among other factors. These and other factors not discussed in this study can hinder students' environmental attitude because attitudes are formed as a result of certain forms of learning experiences. This observation supports the finding of Benson (2011) who argues against the positive effect of students' participation in environmental conservation club activities and learning outcomes. He contends that the levels of students' attitude formation through their participation in ECC club activities depend on the mode of organization and supervision of the club. In similar vein, Adelekan (2016) is of the view that the display of colloquial cultural practices by the students tends to weaken their environmental practices.

4.3.18 Composite contribution of the independent variables to students' environmental practices

The finding of this study on composite contribution of the five independent variables (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) to the prediction of students' environmental attitude revealed that it was significant. This contribution, though small but is shown to be significant. This means there is a positive relationship between the independent variables and the dependent variable. The interconnectivity among the independent variables is evident in their joint contribution towards students' environmental practices. The informal approach of teaching and learning about environment in environmental conservation club affords students the opportunity of interacting and engaging in favourable environmental practices with other students and facilitators from various cultures, religious backgrounds, different residential areas and of gender types (male and female) and through this share varied views as regards environmental related issues and learn good environmental activities which tend to improve their practices in the environment. This result is in support of finding of Schultz (2002) who established a significant contribution of student-related variables to students' environmental practices. Similarly, Durojaiye (2015) reported that differences in students' socio-cultural variables explain their varied practices in the environment.

However, the little contribution of the independent variables to the prediction of students' environmental practices is evident in the persistent insanitary dumping of refuse as a result of the actions (practices) of human being especially in Ibadan. Heaps of decaying refuse are still found in strategic locations in the heart of the city. Students are not exempted from these poor environmental practices as many in their homes cannot afford waste disposal services fees. This observation thus, might weaken students' cultural practices, religious beliefs, home-location, gender-role and participation in environmental conservation club activities' joint contribution to students' environmental practices. This finding corroborates the report of Fafioye and John-Dewole (2013) as they report that poverty, a deplorable state of human welfare, is closely linked to environmental degradation. They state that the poor causes most environmental problems like pollution, deforestation, outbreak of environmental health related diseases e.g. diarrhea, cholera, to mention but few through their poor environmental practices.

4.3.19 Relative contributions of the independent variables to students' environmental knowledge

The report of this study indicated that students' home location and religious beliefs made a significant relative contribution to students' environmental knowledge. The probable explanation might be that the housing quality as well as the quality of the environment in which a student's home is sited exposes him to certain environmental practices which improve his environmental hygiene knowledge and other environmental issues which possibly influence his achievement score in environmental related concepts. Similarly, students' religious beliefs which give nature various moral and spiritual meanings as well as define the place of students in the nature also, guide students on what and what to know about the environment. This probably led to the significant relative contribution of these student-related variables. This result agrees with the findings of Bolu-Steve and Sanni (2013); Hope and Jones (2014); Durojaiye (2015); Funk and Kennedy (2016) who reported that students' home location and religious beliefs have significant relative contribution to students' environmental knowledge. On the other hand, the study contradicts that of Ebong (2014), Duan and Joseph (2010) who discovered that exposure of students to the teaching and learning of environment-related concepts in school's subjects, modernization and westernization tends to influence students' environmental knowledge than any other factor.

This study also reported that students' cultural practices, gender role and participation in environmental conservation club activities have no significant relative contribution to environmental knowledge. This means that the variables are not strong enough to really relate and predict students' environmental knowledge. This might be due to students' display of negative cultural practices, change in gender roles and poor organization and supervision of schools environmental conservation club activities. This finding is in connection with the report of Adelekan (2016) that students' cultural practices did not relatively contribute to students' environmental knowledge. Moreso, Gbadamosi (2015) and Benson (2011) reported that gender role and participation in environmental conservation club activities respectively did not have significant relative contribution to students' environmental knowledge. However, Oyemade, Omokhodion, Olawuyi and Sridhar (2009); Olatundun and Adu (2013); Harrison, Bisong, Akintoye and Ukata (2015) found that students' cultural practices, gender role and participation in environmental conservation club activities respectively relatively, contributed to students' environmental knowledge.

4.3.20 Relative contributions of the independent variables to students' environmental attitude

The report of this study revealed that students' religious beliefs, home location and gender role made a significantly relative contributions to students' environmental attitude. The implication of this is that, these independent variables in this study contributed relatively to the prediction of students' attitude to environment. This could have been as a result of the fact that religious belief appeals more to one's feelings (disposition) as regards a particular thing. This feeling thus, leads to the formation of attitude (positive or negative) as well as behaviour towards such a thing. A student's religious belief therefore goes a long way in influencing and predicting his attitude towards environment. So also, the vicinity where a student's home is located largely determines his disposition to environment while different socialization patterns between a male student and a female student tend to make female students have higher environmentally conscious attitude than the male students. The joint positive relationship and contribution of these independent variables paved way for students' environmental attitude. This result is in correlation with the findings of Whitford and Wong (2009); Kazz (2010); Gardner (2013) and McGrath (2013) who reported that all religious beliefs stress the need for environmental ethics and that such ethics are pro-environmental in nature leading to the development of positive environmental attitude among the adherents. Similarly, Coker, Awokola, Olomolaiye and Booth (2007) in their study established the significant relative contribution of students' home location on their environmental attitude. Fapojuwo (2015) also discovered that students' gender role made significant relative contribution to students' environmental attitude.

This study also established that students' cultural practices and participation have no significant relative contribution to environmental attitude. This shows that the two independent variables did not have enough strength to predict students' attitude to environment. This might mean that other critical factors than cultural practices and participation in environmental conservation club activities are stronger in influencing and predicting students' environmental attitude. This result is in connection with the finding of Adepoju (2003) and Benson (2011) who argued against the significant relative contribution of participation in environmental conservation club activities to students' environmental attitude. In similar vein, Adelekan (2016) reported that students' cultural practices did not relatively contribute to students' environmental attitude. However, the finding of this study contradicts that of Maineri, Barnett and

Valdero (2001) who reported that students' cultural practices relatively contributed to students' environmental attitude. Likewise, Palmberg and Kuru (2011) reported that students' participation in environmental conservation club activities relatively contributed to their attitude to environment.

4.3.21 Relative contributions of the independent variables to students' environmental practices

The result of this finding showed that students' religious beliefs and participation in environmental conservation club activities made significantly relative contributions to students' environmental practices. The implication of this is that, these independent variables contributed relatively to the prediction of students' practices in the environment. This result is not surprising because once a student develops a pro-environmental religious belief, it leads to the formation of positive environmental attitude. This attitude thus, influences behaviour and actions in the environment. Also, the informal approach of teaching and learning environment-related concepts in school's environmental conservation club affords member students the opportunity of interacting with other member students and their facilitators on environmental issues and through this, share varied views and ideas under a free, relaxed and tension free condition. As such, the cooperative engagement and collaborative environmental activities which students and their facilitators involve in encourage the display of positive environmental practices even at individual level. The valuable roles which these independent variables play strengthen them to contribute relatively to the prediction of students' environmental practices. This finding correlates with the report of Oladepo and Sridhar (2012); Ramchandra (2013), Harrison, Bisong, Akintoye and Ukata (2015) who found that students' religious beliefs and students' participation in environmental conservation club activities relatively contributed to students' environmental practices. Though, Duan and Joseph (2010) opposed this view by reporting that other critical factors aside students' religious beliefs and participation in environmental club activities could relatively contribute to students' environmental practices. To them students' home location and formal education can be influential factors.

This study also reported that students' cultural practices, gender role and home location made no significant relative contribution to students' environmental practices. This means that these independent variables did not contribute relatively to the

prediction of students' practices in the environment. It implies that the variables did not have enough strength to predict students' environmental practices. This finding might be as a result of the display of unfavourable environmental cultural practices by the students, change in students' gender role, unsanitary condition of students' home location and other stronger factors which tend to make significant relative contribution to students' environmental practices. This result is in connection with the finding of Wang and Cheng (2010) who in their study found no significant relative contribution of gender role to students' environmental learning activities. Similarly, Orume; Erhiyoma and Udugbawa (2014) reported that students' cultural practices made no significant relative contribution to students' environmental practices. On the other hand, Eero; Grendstad and Wollebak (2011) who worked on students' socio-demographic variables such as sex, age and education and their environmental behaviour/practices revealed that students' gender role made a significant relative contribution to students' environmental practices.

4.3.22 Prediction of students' environmental knowledge

The findings on the variables that could predict students' environmental knowledge indicated that two of them (students' religious beliefs and home location) could predict students' environmental knowledge. The unstandardized regression coefficients (B values) were used to determine the extent of prediction of the students' knowledge on environment by each of the independent variable. The significance of each of the variable's B values was tested and it was discovered that students' religious beliefs and home location significantly predicted the dependent variable (students' environmental knowledge). Students' religious belief was able to predict students' environmental knowledge because it gives nature various moral and spiritual meanings as well as guides students on the facts, ideas and experiences they ought to know as regards the environment. The students' level of allegiance to such religion makes them to strongly hold on to the acquired facts, ideas and experiences in relation to environment. Home location predicted students' environmental knowledge because the quality of the environment in which a student's home is sited exposes him/her to certain environmental behaviour or actions which help in the acquisition of certain facts, ideas and experiences as regards the environment. This therefore possibly predicts his/her achievement in environment-related concepts in Social Studies. The result of this study that revealed two variables that could predict students' environmental knowledge

supports Vygotsky's sociocultural theory (1978) which lays emphasis on how social and cultural influences affect children's thinking and learning. Religion which is embedded in students' culture and their lifestyles in where they live largely predicted their environmental knowledge.

4.3.23 Prediction of students' environmental attitude

The result on the variables that could predict students' environmental attitude revealed that three of them (students' religious belief, gender role and home location) could predict students' environmental attitude. The unstandardized regression coefficients (B values) were used to determine the extent of prediction of the students' attitude to environment by each of the independent variable. The significance of each of the variable's B values was tested and it was found that students' religious belief, gender-role and home-location, significantly predicted the dependent variable (students' environmental attitude). Students' religious belief was able to predict students' environmental attitude because religion which determines students' religious belief appeals more to their feelings and emotions about certain things (living and non-living nature inclusive). These feelings and emotions transform into attitude which is best expressed when students behave in a particular manner towards a particular thing. This means that the attitude (positive or negative) which students have as regards the environment is essentially determined by their religious beliefs. Once an attitude is formed religiously, it is strongly held unto to by its adherents. Gender role predicted students' environmental attitude because from childhood, females are socialized to be family nurturers and care givers. The nurturing and caring attitude that result from this socialization are translated into attitude toward nature and environment and thus, more caring than that of their counterparts. In the same vein, home location predicted students' environmental attitude because the quality of students' home environment largely influence their attitude to the environment. For instance, a student whose home is located in a planned residential area tends to appreciate and value hygienic and aesthetic environment. He/she feels bad when he/she sees refuse and other waste either on road side, drainage or any other unauthorized place. The outcome of this study correlates with the finding of Raudsepp (2001) who reported that students' socio-demographic variables significantly predicted environmentalism.

4.3.24 Prediction of students' environmental practices

The report on the variables that could predict students' environmental practices indicated that two of them (students' religious beliefs and participation in environmental conservation club activities) could predict students' environmental practices. The unstandardized regression coefficients (B values) were used to determine the extent of prediction of the students' environmental practices by each of the independent variable. The significance of each of the variable's B values was tested and it was discovered that students' religious beliefs and participation in environmental conservation club activities significantly predicted the dependent variable (students' environmental practices). Students' religious belief was able to predict students' environmental practices because certain religious beliefs influence people's environmental care-seeking behaviour (practices). Religious beliefs determine how people should act in the environment. A student who believes in environmental stewardship will see the care of his environment at home, school and any other places he finds himself as divine assignment whereas, a student who believes in environmental dominionship sees no reason why he should not do whatever he likes to the environment. Students' participation in environmental conservation club activities was also able to predict students' environmental practices because as students participate in environmental activities in the club, they realize the fact that every single thing one does impacts (positively or negatively) the environment. Hence, they develop pro-environmental behaviours and actions which they will be so much used to in their daily living. The report of this study supports Harrison, Bisong, Akintoye and Ukata (2015) who stated that environmental conservation club in schools empowers students to participate and take up meaningful environmental activities at home, school and any other place(s) they find themselves.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSION

This chapter presents the summary of the findings, the implications of the findings of this study for the teaching and learning of environmental related concepts in Social Studies as well as recommendations and conclusion.

5.1 Summary of findings

The results of the study are summarized as the following:

- There is a positive significant relationship between students' cultural practices, religious beliefs, home location, participation in environmental conservation club activities and students' environmental knowledge. Students' home location has the highest score, seconded by students' religious beliefs, followed by students' participation in environmental conservation club activities, then students' cultural practices. But students' gender role has no significant relationship with students' environmental knowledge.
- Students' cultural practices, religious beliefs, home location and gender role have positive significant relationships with students' environmental attitude. Students' religious beliefs have the greatest score, closely followed by students' home location, followed by students' gender role, then students' cultural practices. But students' participation in environmental conservation club activities has no significant relationship with students' environmental attitude.
- There is a positive significant relationship between students' cultural practices, religious beliefs, home location, gender role and students' environmental practices. Students' religious beliefs have the highest score, closely followed by students' participation in environmental conservation club activities, followed by students' home location, then students' cultural practices. But students' gender role has no significant relationship with student's environmental practices.
- There is a significant joint contribution of independent (predictor) variables on students' environmental knowledge. By multiple regression analysis, the independent variables accounted for 16% of the variance observed in the students' environmental knowledge. However, the contribution of each predictor variable to students' environmental knowledge is at different levels.

- There is a significant joint contribution of predictor variables on students' environmental attitude. The multiple regression analysis reveals that the independent variables accounted for 5.8% of the variance observed in the students' environmental attitude. This contribution, though small, is shown to be significant. The predictor variables' contribution on students' environmental attitude is at different levels.
- There is a significant joint contribution of independent variables on students' environmental practices. Multiple regression analysis shows that 1.5% of the total variation in the environmental practices of students is attributable to the joint contribution of the predictor variables in the study. This contribution though small, is shown to be significant. The independent variables' contribution on students' environmental practices is at different levels.
- There is a positive significant relative contributions of students' home location and students' religious beliefs on students' environmental knowledge. Students' home location made the highest score in facilitating students' environmental knowledge, followed by students' religious beliefs. But students' participation in environmental conservation club activities, students' gender role and students' cultural practices have no significant relative contribution on students' environmental knowledge respectively.
- There is a positive significant relative contributions of students' religious beliefs, students' home location and gender role on students' environmental attitude respectively. But students' cultural practices and students' participation in environmental conservation club activities have no significant relative contribution on students' environmental attitude respectively.
- There is a positive significant relative contributions of students' religious beliefs and students' participation in environmental conservation club activities on students' environmental practices respectively. But students' cultural practices, students' home location and students' gender role have no significant relative contribution on students' environmental practices respectively.
- The result of this study shows that students' home location and students' religious beliefs only can predict students' environmental knowledge.

- Students' religious beliefs, students' home location and students' gender role are the only independent variables that can predict students' environmental attitude in the study.
- The finding of the study also reveals that students' religious beliefs and students' participation in environmental conservation club activities are the only good predictors of students' environmental practices in the study.

5.2 Conclusion

The study investigated students' sociocultural variables (cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) as predictors of environmental literacy in Social Studies among junior secondary school students in Ibadan, Nigeria. Findings of the study revealed that two independent variables (students' home location and religious beliefs) in this study were capable of predicting students' environmental knowledge. Meanwhile, three independent variables (students' participation in environmental conservation club activities, gender role and cultural practices) in this study were not capable of predicting students' environmental knowledge. The variables except gender role which was insignificant at the level of relationship were significant at the level of relationship and composite contribution. Three independent variables (students' religious beliefs, home location and gender role) were found capable of predicting students' environmental attitude while two independent variables (students' cultural practices and participation in environmental conservation club activities) were discovered not capable of predicting students' environmental attitude.

The variables except students' participation in environmental conservation club activities, which was found insignificant at the level of relationship, were significant at the level of relationship and composite contribution. Two independent variables (students' religious beliefs and participation in environmental conservation club activities) in this study were capable of predicting students' environmental practices while three independent variables (students' cultural practices, home location and gender role) in this study were not capable of predicting students' environmental practices. The study also revealed that each of the independent variables has significant positive relationship and composite contribution to students' environmental practices with the exception of students' gender role and participation in environmental conservation club activities.

It could therefore be concluded from this study that students' home location and religious beliefs are potent student variables that could improve students' environmental knowledge while students' religious beliefs, home location and gender role are very germane in determining students' environmental attitude. In this regard, it is obvious that instructional strategies alone, no matter how recent, cannot alone solve the problem of students' poor learning outcomes in environmental related concepts in Social Studies especially, students' poor environmental attitude and practices. The teaching and learning process is more effective and worthwhile when students' sociocultural variables are recognized. Therefore, critical students' factors such as cultural practices, religious belief, home location, gender role and participation in environmental conservation club activities need to be strictly focused on by the school administrators and teachers in the teaching and learning process in constant search for way out of the problem of students' poor environmental attitude and practices in the junior secondary schools especially, in Ibadan.

On this premise, there is a need for the Social Studies teachers to make a move away from the modified conventional strategy which is majorly dominated by teachers' instruction and activities, to a less threatening, less tension free and friendly atmosphere that involved the use of informal school-based environmental club activities in schools. The study has shown a blend of formal curricular activities with informal co-curricular activities. When these activities are adequately applied and related to the teaching and learning of environmental related concepts in Social Studies, they could help in solving the problem of persistent poor environmental attitude and practices among junior secondary school students especially in Ibadan.

5.3 Implications of the findings

Findings of this study have several implications for teaching and learning process of environmental related concepts in Social Studies as follows:

1. Student-related variables (students' home location and religious beliefs) can predict students' environmental knowledge. Also, students' religious beliefs, home location and gender role can predict students' environmental attitude while students' religious beliefs and participation in environmental conservation club activities can predict students' environmental practices.
2. At the level of relationships and composite contribution, the variables in the study cannot be over looked as regard students' environmental knowledge,

attitude as well as practices. Therefore, attention should not only be on improvement in teaching strategies to foster environmental literacy in social studies among junior secondary school students but also on these variables that directly affect students' environmental literacy in Social Studies especially, students' environmental attitude and practices.

3. The informal school environmental conservation club activities afford students the opportunity of interacting with one another and the facilitator. This therefore, gives room for the sharing of varied environmental views and experiences in relation to students' social and cultural backgrounds. With this, good environmental views and behaviour are encouraged while bad environmental attitude and practices are discouraged.
4. Student-related variables especially those used in the study (students' cultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities) are as important as teacher-related and pedagogical variables when trying to solve problem of poor learning outcomes in environment-related concepts in Social Studies. Specifically, the problem of poor environmental attitude and practices among junior secondary school students in Ibadan.
5. Students' religious belief in the study is found to be the most potent student-related variable at the level of composite contribution, relative contribution and predictive capability of students' environmental attitude and practices. Even, at the level of relationship with students' environmental knowledge, religious beliefs came second.
6. When Social Studies instruction (especially, environmental related topics) is activity-based and student-centred, the quality and quantity of learning are improved. Practical dimension of environmental literacy is thus encouraged.
7. Students' awareness about environment, its problems and solutions to such problems can be increased through their participation in environmental conservation club activities. The club provides opportunities for students and facilitators to engage in actions and behaviour that impact positively towards achieving a more sustainable school and home environments.

The findings of the study confirm the Vygotsky's sociocultural theory which acknowledges the relevance of children's cultural and social backgrounds such as their

cultural practices, religious beliefs, gender role, home location and participation in environmental conservation club activities in shaping their learning/behaviour. The theory states that children learn from social interactions within a cultural context. Therefore, a child should not be separated from his/her sociocultural background as this determines how he learns, thinks, feels or relates with his/her environment.

5.4 Recommendations

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

- School administrators should encourage the establishment and supervision of environmental conservation club activities in all junior secondary schools especially in Ibadan, considering the unsanitary environmental state of many schools in Ibadan and Ibadan metropolis itself, and the significant relationship as well as relative contribution of the club's activities to students' environmental practices. It should be noted that few schools have the club and the fact that the adults use the young ones to carry out unfavourable environmental activities should not be forgotten. The young ones are also receptive to learning.
- Aside the formation of the club, students' participation in environmental conservation club activities should be encouraged in schools, especially Social Studies students because the activities help to improve achievement in environmental related knowledge test and also assists in the formation and improvement of pro-environmental attitude which invariably leads to the display of good environmental practices even, when outside the school. Moreso, practical dimension of environmental literacy is achieved as students are exposed to series of empowerment skills leading to job creations.
- Religious leaders should further encourage students' pro-environmental religious beliefs among their adherents (especially the younger ones) by incorporating environmental discourse in their religious sermons in mosques, churches and in shrines. This is as a result of the significant effect of students' religious beliefs that was discovered in the study. Students' religious belief was found to be the most potent students' variable at the levels of composite and relative contribution, predictive capability and even, good predictor of students' environmental knowledge, attitude and practices.

- New and improved teaching strategies alone may not solve the problem of poor environmental literacy in social studies, rather students' related variables should also be taken into cognisance for improved environmental literacy in social studies. Students are also important stakeholders in the teaching and learning of environmental related concepts in social studies.
- Since environmental issues cut across all school disciplines and walks of life, regular seasoned seminars and workshops should be organized for all the school subject teachers in order to expose them to the teaching of environmental related concepts through the school based environmental conservation club activities, especially educating them on student-related environmental variables.
- Environmental conservation club serves as an interactive forum where students' sociocultural factors which have direct effect on environmental activities are discussed among member students from different social backgrounds. Hence, social studies teachers should take up the responsibility of effective organizing, monitoring, controlling and supervising the activities of the club in order to stem anti-environmental sociocultural activities which can hinder students' learning outcomes in environmental related concepts in social studies.
- Curriculum developers should put into consideration students' sociocultural practices, religious beliefs, home location, gender role and participation in environmental conservation club activities in the process of designing the social studies curriculum or formulating environmental intervention policies and programmes.
- Schools through environmental conservation clubs should partner with the non-governmental environmental organizations in embarking on school environmental intervention programmes such as waste recycling project, construction or rehabilitation of schools' conveniency, provision of sanitation facilities e.g. waste bins, among others.

5.5 Contributions of the study to knowledge

The study explored the practical dimension of environmental literacy by bringing out and developing creative skills in students as they recycled already used materials for re-use. For instance, used plastic containers like water and soft-drink bottles, take-away food packs, among others, were recycled into flower vases, pencil cases, trophy cups, key holders, house-hold decorations, to mention but a few. Used

tyres were also used to beautify the school compound instead of burning or disposing them haphazardly. With this, the trash especially, plastic bottles and used tyres seen on the streets will be reduced and the community can be clean again.

Through the series of activities carried out in the club, the study develops in the students sustainable empowerment skills such as leadership skills, communicative competence skills, public speaking skills, critical thinking skills, and social skills with which they interact peacefully with other students from socio-economic and cultural backgrounds. This thus, strengthens peaceful co-existence especially, in a multicultural society like Nigeria. Similarly, students weigh issues especially, environmental issues objectively, and take reasoned decisions and judgment as regards the environment.

The outcome of this study adds to the body of research on student-related variables that other researchers can further work on. Teachers' attention in particular, is geared to focus on the variables within the students rather than teaching strategies only.

The findings from the study serve as an eye opener to Social Studies teachers who are now exposed to the benefits of using school-based environmental conservation club activities as an informal participatory approach in improving environmental literacy in Social Studies.

The study has revealed the importance of students' religious beliefs to the improvement of students' environmental knowledge, attitude and practices. It has also shown that school-community relationship can be established and at the same time strengthened as school based environmental club members organize campaigns and talks to sensitise the communities about the need for a sustainable environment.

The study draws the attention of both the government and non-governmental environmental organizations to the significance of school based environmental conservation club to the sustainability of environment. This therefore will encourage them to partner with the school-based environmental conservation club in making both students and the public environmentally literate.

The study also fills the gap of lack of empowerment of the students for their future. Through the club, entrepreneurship skills are inculcated and developed in the students, making them to be job creators and not job seekers. The study supports the saying "Education should be for empowerment and not employment".

Since environmental protection is one of the major aims of adopting Sustainable Development Goals (SDGs) in the world, this study has established a link between

students' environmental literacy in Social Studies and the realisation of the Sustainable Development Goals (SDGs) in Nigeria.

5.6 Limitations to the study

The study was limited to only 30 junior secondary schools that have environmental conservation club in Ibadan, Oyo State. Also, out of the numerous student-related factors that could predict students' environmental knowledge, attitude and practices, the study limited itself to only five. Lots of constraints were experienced from some schools and students. Some schools in order not to disrupt the normal school work did not allow the students to respond to all the questionnaire forms at once. Due to this, some schools were visited not less than four times before the questionnaire could be fully completed. Moreover, some students were bored filling the 6 different questionnaire forms. Many respondents from public schools in the study could not read the questionnaire items themselves. The researcher and her assistants had to read the items one after the other for them.

Visiting the schools at different times when they operated their environmental activities was another challenge as there were clashes of day and time of operation in some schools. Environmental Health Students' Association (EHSA), University of Ibadan, who is one of the founders of ECCs in schools in Ibadan could not devote much time for the monitoring of the club activities because the clubs were to be coordinated alongside with their normal course work in the college. As a result of these challenges, the expected period for the field work was extended from 6 weeks to 13 weeks.

5.7 Suggestions for further research

It is believed that the completion of every research leads to the beginning of further research. There is the need to replicate this study in other states of the country where school-based environmental conservation clubs exist so that a more valid generalization could be made. The result of this research is an eye-opener for other researchers to examine various other student-related variables that could predict students' environmental literacy in Social Studies. The student-related variables in this study or other variables can be used to predict learning outcomes in other environment-related school subjects like Basic Science, Geography, Biology, among others, and senior secondary school students can be used as participants as some of them are also members of the club.

In addition, other researchers may wish to examine experimentally, effects of school-based environmental conservation club activities on students' learning outcomes in environment-related concepts in social studies, using environmental conservation club members as experimental group and non-members of the club as control group. There might also be avenue for further study on students' religious beliefs and home location as correlates of students' environmental knowledge, attitude and practices. Comparative study of public and private junior secondary school students' environmental knowledge, attitude and practices can also be carried out (the students must be environmental conservation club members).

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APPENDIX I
STUDENTS' CULTURAL PRACTICES QUESTIONNAIRE (SCPQ)

SECTION A: PERSONAL DATA

Instruction:

Kindly supply the required information to the under-listed

Name of School:.....

Class:.....

Ethnic-Group:.....

Sex:.....

SECTION B

Instruction:

Dear Respondent,

Please respond to the following items as they apply to you by ticking (√) in the appropriate column, the level of your agreement or otherwise to them. There are no right or wrong answers, so feel free to respond to them sincerely. You are to tick “SA” when you strongly agree, “A” when you merely agree, “D” when you disagree and “SD” when you strongly disagree. Thank you.

S/N	ITEMS	SA	A	D	SD
1.	Washing plates immediately after eating makes me feel hungry so soon.				
2.	When I am served food, I use to remain some quantity for unseen spirits' consumption.				
3.	I like eating bean-cake prepared with leaves.				
4.	I like eating bush meat.				
5.	I admire cultural regalia (dress) made with bird feathers.				
6.	I am not used to washing plates immediately after use.				
7.	Bush meat eating is forbidden in my culture.				
8.	I do not like the idea of keeping wildlife animals hence,I see game reserve as a waste of money.				
9.	I do not feel comfortable if I do not sweep the house in the				

	morning before going to school.				
10.	“Abiku” syndrome is the major cause of mortality in children.				
11.	I dispose our dirts by putting it by the road side.				
12.	I do not like sitting on the mortal as I believe this act is not hygienic enough.				
13.	I do not believe in the efficacy of herbs (root, bark, leaves etc. of trees) in treating illnesses and diseases.				
14.	I do separate wastes in my home.				
15.	I defecate either in a nearby drainage, dilapidated building or an open land very close to my house.				
16.	In my culture, it is a taboo for motorists to kill some animals like ducks, sheep etc.				
17.	It is not compulsory that I should wash my hands with water and soap after leaving the toilet				
18.	As a sign of respect for nature I cannot pour hot water on the land.				
19.	I prefer to burn refuse than dumping it inside waste bin for refuse collector.				
20.	I cannot die as a result of drinking impure water.				
21.	If I am pressed, I can urinate anywhere.				
22.	Hunting games in forest reserves is forbidden in my culture.				
23.	If I am in a moving vehicle, I throw dirt away through the window.				
24.	I prefer bush burning to bush cutting anytime farmland is to be cleared for planting crops.				
25.	When it is raining, I use to pour our dirts inside the flowing rain water				

APPENDIX II
STUDENTS' RELIGIOUS BELIEFS QUESTIONNAIRE (SRBQ)
SECTION A: PERSONAL DATA

Instruction:

Kindly supply the required information to the under-listed.

Name of School:.....

Class:.....

Sex:.....

Religion: Islam () Christianity () Traditional ()

SECTION B

Instruction:

Dear Respondent,

Please respond to the following items as they apply to you by ticking (√) in the appropriate column, the level of your agreement or otherwise to them. There are no right or wrong answers, so feel free to respond to them sincerely. You are to tick “SA” when you strongly agree, “A” when you merely agree, “D” when you disagree and “SD” when you strongly disagree. Thank you.

S/N	ITEMS	SA	A	D	SD
1.	I believe child’s environmental health diseases e.g. diarrhea can be cured by religious healers.				
2.	I believe human like any other creatures is part of the environment.				
3.	It is my belief that human being was created with divine authority to control/dominate all other creatures on earth.				
4.	I believe I should treat natural things e.g. land, river, trees, etc. with all care.				
5.	According to my religious belief, anything I do to the environment I shall give account of it in the last day.				
6.	I believe there is not much I can do to help solve environmental problems.				
7.	I believe keeping my environment clean is part of my service to God.				

8.	I believe things that I do, do not have effect on the quality of the environment.				
9.	I believe that I can contribute to the solution of environmental problems by my actions.				
10.	In respecting the environment, I am downgrading my rulership status.				
11.	I believe all the natural features like trees, soil, river etc. are created for the benefit of human beings.				
12.	There is no sin in worshipping hills, rivers, trees, rocks, etc. as this shows one's care and love for the environment.				
13.	According to my own religious belief, soil, trees, bushes, rivers, etc. have lives of their own.				
14.	I believe that without other creations (visible and invisible) in the environment, I can live a complete life.				
15.	As regards my own religious faith, care for animals and plants is seen as compliance to the word of God.				
16.	It is my own religious belief that I am a God's steward on earth over nature.				
17.	According to my own religious faith, animals should not be treated cruelly, caged or beaten unnecessarily.				
18.	It is my belief that natural disasters such as earthquakes, floods and droughts are God's warning to people that they have moved away from the righteous path.				
19.	God has given me the divine responsibility of rulling over all other creatures to my own satisfaction.				
20.	According to my own religious belief, the growing environmental problems in the society is seen as signs of the second coming.				
21.	My religious faith teaches me not to be concerned about the current environmental problems but focus on preparation for the afterlife.				
22.	I believe in the sacred power of Osun Osogbo river in providing children for barren women.				

23.	According to my own religious faith, cleanliness is Godliness.				
24.	I believe some natural features like hills, rivers, trees, rocks, etc. have spiritual powers to solve people's problems.				
25.	It is my belief that flooding can be solved by worshipping river goddess.				

APPENDIX III
STUDENTS' GENDER ROLES QUESTIONNAIRE (SGRQ)
SECTION A: PERSONAL DATA

Instruction:

Kindly supply the information to the under-listed sincerely.

Name of School:.....
 Class:.....
 Age:.....
 Sex:.....
 Religion:.....

SECTION B

Instruction:

Dear Respondent,

Please respond to the following items as they apply to you by ticking (√) in the appropriate column, the level of your agreement or otherwise to them. There are no right or wrong answers, so feel free to respond to them sincerely. You are to tick “SA” when you strongly agree, “A” when you merely agree, “D” when you disagree and “SD” when you strongly disagree. Thank you.

S/N	ITEMS	SA	A	D	SD
1.	Due to my gender status, I spend more time at home and its immediate vicinity.				
2.	I use to sweep and keep both my home and school everyday environment tidy.				
3.	If the house and its surrounding are dirty, my parents do blame the girl-child\children that are at home.				
4.	On every Saturday, my mother and I do environmental sanitation at home.				
5.	I do keep our home tidy by cleaning up all the rooms				
6.	I wash toilet and scrub bathroom every Saturday morning.				
7.	I use to wash plates and other cooking utensils in our home.				
8.	On every Saturday, I play football on the open land beside our				

	house.				
9.	I use to dispose refuse in our home.				
10.	I do wash all the water containers and fetch water inside them in our home.				
11.	I use to sweep and wash gutters in my home.				
12.	Sweeping and cleaning our home surrounding is my duty.				
13.	In my home, boys are exempted from sweeping the rooms and home surrounding.				
14.	Girls do not wash used plates in my home.				
15.	I always stay with my mother while cooking and tidy up the kitchen after cooking.				
16.	After returning home from school (after the school closing hour), I am always found at home.				
17.	Girls do domestic work-sweeping, cleaning, washing etc. more than boys in my home.				
18.	I am always concerned about keeping my home surrounding clean.				
19.	My mother's caring attitude towards the environment encourage me also to care for the environment.				
20.	My mother do punish me if I fail to tidy up rooms and home surrounding				
21.	My father is more concerned about home environmental sanitation than my mother				
22.	In my school, boys are not put on classroom sweeping roster.				
23.	I learnt to appreciate clean environment through my mother.				
24.	Once in a while, my mother do educate me and my other siblings about the environment				
25.	I do dust spider cobwebs in my home.				

APPENDIX IV

**STUDENTS' PARTICIPATION IN ENVIRONMENTAL CONSERVATION
CLUB ACTIVITIES OBSERVATION SCALE (SPECCAOS)**

SECTION A

Instruction:

Kindly supply the information to the under-listed sincerely.

Name of Research Assistant :.....

Name of School:.....

Date:.....

SECTION B

**Students' Participation in Environmental Conservation Club Activities
Observation Scale (SPECCAOS)**

Instruction: Observe the level of students' participation and rate their activities based on the rating scale provided in this section.

S/N	Level of students' participation	Rating Scale		
		Frequently 3	Rarely 2	Never 1
1.	Participants are not showing any interest at all in conservation club activities			
2.	Participants are showing interests but have nothing to contribute on environmental conservation club activities			
3.	Participants do not pay attention but rather engaged themselves in other activities			
4.	Participants are present but not showing any evidence of preparation for the conservation club			
5.	Participants respond only when called upon, yet having nothing much to offer in the conservation club			

	activities			
6.	Participants are frequently active, demonstrating evidence of adequate preparation for the conservation club activities			
7.	Participants demonstrate active involvement during the recycling of materials that can be re-used			
8.	Participants give relevant and current information to the conservation club during environmental talk			
9.	Participants demonstrate boldness in disseminating information read from newspaper articles on environmental conservation to others in the club			
10.	Participants are all active contributors in the quiz competition in the conservation club			
11.	Participants do not offer to contribute to anything in the conservation club activities even when called upon			
12.	Participants speak fluently and confidently in the presentation of facts with illustrate evidence			
13.	Participants show interest and play active roles in the presentation of drama on environment in the conservation club			
14.	Participants are exceptional in presenting news about environmental activities/issues happening in the school and around the school environment			

15.	Participants enjoy going out for conservation “crusade” to sensitise the community members about the need for a sustainable environment				
16.	Participants show interest in the tree planting exercise organized by the conservation club				
17.	Participants are happy wetting and “dressing” the trees and flowers planted within the school premises				
18.	Participants are exceptional in singing songs related to environment				
19.	Participants enjoy picking litters and other dirts in the school compound				
20.	Participants are happy emptying waste bins put at the strategic places in the school premises				

Key to the Observation Rating Scale

	Level of Students’ Participation	Rating
1.	Frequently	3
2.	Rarely	2
3.	Never	1

APPENDIX V

STUDENTS' ENVIRONMENTAL KNOWLEDGE TEST (SEKT)

SECTION A: PERSONAL DATA

Instruction:

Kindly supply the information to the under-listed sincerely.

Name of School:.....

Class:..... Age:

Sex:..... Religion:.....

Ethnic Group:.....

SECTION B

Instruction:

Dear Respondent,

Below are items on environmental concepts//issues. Choose the answer, which you consider to be correct for each item. Mark boldly the option which corresponds to your choice.

Please mark only ONE option.

1. Environment can best be defined as
 - a. The study of man in his surroundings
 - b. All of the living and non-living things that make up human's surroundings
 - c. All non-living things that make up human's surroundings
 - d. All living things in human's surroundings
2. What should be done to conserve our natural environment?
 - (a) Do not use natural resources
 - (b) Use natural resources wisely
 - (c) Provide more natural resources
 - (d) Over use natural resources
3. _____ resources are those resources which decrease in quantity as they are being used
 - a. Non-renewable b. Non-natural c. Renewable d. Non-mineral
4. Pollution can be defined as
 - (a) Exchange of energy and materials between living and non-living things
 - (b) Spoilage or contamination of our environment
 - (c) The release of oil on the surface of the earth alone
 - (d) Release of smoke from exhaust pipes alone

5. Which of the following discharge could cause environmental pollution?
 - (a) Oil
 - (b) Refuse
 - (c) Noise
 - (d) All of the above
6. Which of the following solid waste disposal methods produces air pollution?
 - (a) By dumping refuse inside a flowing river
 - (b) Burning of refuse
 - (c) None of the above
 - (d) By burying of refuse
7. The combination of pleasant sound by confused meaningless and continuous sound is referred to as Pollution
 - (a) Land
 - (b) Air or atmospheric
 - (c) water pollution
 - (d) Noise
8. Flooding can be caused by
 - (a) heavy rainfall
 - (b) vehicle smoke
 - (c) poor farming system
 - (d) pouring liquid waste on land
9. All are effects of flooding except
 - (a) destruction of properties
 - (b) loss of lives
 - (c) loss of rivers
 - (d) displacement of people
10. Popular Ogunpa flood disaster happened in Ibadan in the year
 - (a) 1981
 - (b) 1988
 - (c) 1982
 - (d) 1980
11. To prevent flooding
 - (a) Avoid burning refuse on land
 - (b) Avoid dumping refuse inside waste bin
 - (c) Avoid burying refuse inside the soil

- (d) Avoid disposing refuse inside the drainage
12. Do you believe in this quotation? The earth does not belong to human being, human being belongs to the earth”.
- (a) Yes
 - (b) To a little extent
 - (c) No
 - (d) To a large extent
13. React to this saying, “The moment man stops producing waste products, the moment man becomes a waste product”
- (a) False
 - (b) True
 - (c) Not in all cases
 - (d) Just to a small extent
14. Solid waste is
- (a) any unwanted material which is considered useless
 - (b) any substance kept to be used later
 - (c) any liquid substance which is considered useless
 - (d) any unwanted sound which is considered useless
15. The more the environment is pollution free, the more the survival of human beings in the environment
- (a) False
 - (b) Partially
 - (c) True
 - (d) All of the above
16. Flood disaster can be checked by
- (a) Appeasing river goddess
 - (b) Enlarging drainages to accommodate refuse
 - (c) Praying to God to stop rain
 - (d) Stopping dropping refuse inside rivers and water channels
17. is concerned with how waste can be stored, transferred and disposed
- (a) Environmental programme
 - (b) Waste management
 - (c) Environmental education

- (d) Environmental sanitation
18. If care is not taken, deforestation can lead to
- (a) Afforestation
 - (b) Desertification
 - (c) Sanitation
 - (d) Reformation
19. Which of the following is orderly arranged
- (a) Deforestation \Rightarrow soil erosion \Rightarrow soil infertility \Rightarrow poor crop harvest
 - (b) Soil infertility \Rightarrow soil erosion \Rightarrow deforestation \Rightarrow poor crop harvest
 - (c) Poor crop harvest \Rightarrow deforestation \Rightarrow soil erosion \Rightarrow soil infertility
 - (d) Deforestation \Rightarrow soil infertility \Rightarrow poor crop harvest \Rightarrow soil erosion
20. Deforestation can be checked by all except
- (a) Cut a tree and plant two
 - (b) Discourage domestic consumption of timber
 - (c) Encourage the activities of log/plank trucks
 - (d) Encourage more forest reserve areas
21. Cutting down of trees for timber and for other purposes without replanting is termed as
- (a) Deforestation
 - (b) Environmental sanitation
 - (c) Afforestation
 - (d) Ecology
22. Re-use of cleaned or refurbished materials is known as
- (a) Reformation
 - (b) Recycling
 - (c) Material processing
 - (d) Recovery
23. One of the following is not an objective of conserving natural resources
- (a) To eliminate wild animals in order to enable other plants and domestic animals to survive
 - (b) To guide against indiscriminate killings of animals destruction of plants
 - (c) To use resources on a sustained basis
 - (d) To guide against the extinction and exhaustion of natural resources

24. Pollution affects the quality of
- (a) Water
 - (b) Air
 - (c) Life
 - (d) All of the above
25. If waste is not properly managed, it can lead to all except
- (a) Sanitation of the environment
 - (b) Pollution of the environment
 - (c) Destruction of the environment
 - (d) Degradation of the environment
26. Major solution to waste problems is
- (a) Recycling of waste
 - (b) Reduction of waste
 - (c) Burying of waste
 - (d) Burning of waste
27. One of these is not one of the importance of Nigerian highlands
- (a) Sources of mineral resources
 - (b) A suitable land for mechanized agriculture
 - (c) Sources of rivers
 - (d) Provide defence against enemy attacks
28. All are examples of mineral resources except
- a. Food crop
 - b. coal
 - c. marble
 - d. limestone
29. Cutting down of trees can expose the land to
- a. Pollution
 - b. Nutrition
 - c. Erosion
 - d. Sanitation
30. Which of the following mineral resources is found in Enugu
- a. Limestone
 - b. Columbite
 - c. Coal
 - d. Crude oil

APPENDIX VI

ANSWERS TO THE STUDENTS' ENVIRONMENTAL KNOWLEDGE TEST

(SEKT)

- | | | | |
|-----|---|-----|---|
| 1. | B | 16. | D |
| 2. | B | 17. | B |
| 3. | A | 18. | B |
| 4. | B | 19. | A |
| 5. | D | 20. | C |
| 6. | B | 21. | A |
| 7. | D | 22. | B |
| 8. | A | 23. | A |
| 9. | C | 24. | D |
| 10. | D | 25. | B |
| 11. | D | 26. | B |
| 12. | A | 27. | B |
| 13. | B | 28. | A |
| 14. | A | 29. | C |
| 15. | C | 30. | C |

APPENDIX VII

STUDENTS' ENVIRONMENTAL ATTITUDE QUESTIONNAIRE (SEAQ)

Instruction:

This questionnaire seeks to examine your feelings towards the environment. Below are some statements about our environment. Please mark (√) the box that matches the extent of your agreement or disagreement with each statement. The letters in the column stand for the following:

- SA - Strongly Agree
- A - Agree
- D - Disagree
- SD - Strongly Disagree

S/N	STATEMENTS	SA	A	D	SD
1.	I am always interested in issues that affect the quality of my environment.				
2.	I don't believe that minerals can be exhausted in the ground, they are always available for usage.				
3.	I don't believe in planting trees, since nature can replace them naturally.				
4.	I always like to switch on the light throughout the day and even in the night when I sleep.				
5.	Incinerators should be situated far to the house because of incessant burning that can release smoke into the air.				
6.	I always like keeping my surrounding clean every time by sweeping it				
7.	I feel bad anytime I see wastes or refuse inside the gutter.				
8.	Maintaining environmental quality has nothing to do with me.				
9.	Getting involved in environmental expeditions aroused my interest in environmental concepts in Social Studies.				
10.	Whether I take care of my environment or not, God				

	will always take care of it.				
11.	I don't think hunting animals for "bush meat" is a bad/wrong thing.				
12.	If I have option, I wouldn't have offered Social Studies as a subject.				
13.	I developed interest in environmental related issues from Social Studies.				
14.	I like discussing environmental issues with my friends.				
15.	It is high time I changed my non-challant attitudes as regards disposal of refuse.				
16.	I am an active member of environmental conservation club in my school.				
17.	I participate in environmental debates, quiz exhibitions and drama in my school.				
18.	I feel bad throwing litters on the floor.				
19.	I admire clean environment.				
20.	I enjoy visiting tourist centres to see physical features in their natural forms.				
21.	Dumping of refuse in rivers and water channels is the most convenient way I can dispose refuse.				
22.	I prefer to burn used papers than recycling them to be toilet tissues/papers.				
23.	If I destroy my environment, I destroy myself.				
24.	Protection and maintenance of environment start with me.				
25.	I like reading newspapers and magazines on environmental issues				

APPENDIX VIII

STUDENTS' ENVIRONMENTAL PRACTICES SCALE (SEPS)

This scale seeks to examine the extent of your involvement in environmental activities. Below are some statements on environmental practices. Please, feel free to respond to each of the statement as applicable to you by marking (√) the box that matches your response.

S/N	Statement	Always	Sometimes	Never
1	How often do you remind your friends not to litter the surrounding?			
2	How often do you take active part in school environmental sanitation?			
3	How often do you throw your waste in any open place?			
4	How often do you throw or leave your faeces into open ground or bush?			
5	How often do you throw wastes or refuse inside gutter?			
6	How often do you discuss with your friends and neighbours about the environment?			
7	How often do you throw refuse inside waste bin?			
8	How often do you burn refuse?			
9	How often do you urinate or pass faeces in open ground in the school?			
10	How often do you dump refuse by the roadside			
11	How often do you wash your hands with water and soap after leaving the toilet?			
12	How often do you pick up litters you come across in the school compound?			
13	How often do you reuse plastic take away containers and bottles?			
14	How often do you throw refuse into the rain?			

15	How often do you throw paper and pure water sachets on the ground while you are in a moving vehicle?			
16	How often do you compost or bury your refuse?			
17	How often do you put your refuse bag or container for pick-up by the garbage truck?			
18	How often do you sweep and clean your room and home surroundings?			
19	How often do you encourage your parents to plant trees around your home compound?			
20	How often do you use napkins instead of paper to clean dirt?			
21	How often do you buy nylon bags for shopping?			
22	How often do you reuse used nylon for shopping?			
23	How often do you use a refillable water bottle to take water to school?			
24	How often do you buy sachet water?			
25	How often do you go to the school's refuse ground to dispose used paper or pure water sachets?			

PARTICIPANTS'SCHOOLS

A. Public Schools

1. Adekile Goodwill Grammar School, Orita-Aperin, Ibadan
2. Methodist Secondary School, Favors, Ibadan
3. Sacred Heart Secondary School; Ode- Oolo, Ibadan.
4. Olubadan High School, Orita-Aperin, Ibadan.
5. Saint Bridges Secondary School, Ibadan.
6. Oba-Abass Aleshinloye Grammar School, Eleyele, Ibadan.
7. I.M.G. Grammar School, Oje-Igosun, Ibadan.
8. Abadina College, School 2, U.I. Ibadan.
9. Anwa-ru-Islam Grammar School, Eleyele, Ibadan.
10. Humani Alaga Secondary School, Expoyo, Sango, Ibadan.
11. Ikolaba High School, Ikolaba, Ibadan.
12. Eleyele High School, Polo Club, Eleyele, Ibadan.
13. I.M.G. Grammar School, Yemetu, Ibadan.
14. Anglican Commercial Grammar School, Oritamefa, Ibadan.
15. Saint Louis Grammar School, Mokola, Ibadan.
16. Ikolaba Grammar School, Agodi-gate, Ibadan
17. Bishop Onabanjo High School, Ibadan.
18. Oba Akinbiyi High School, Mokola, Ibadan.
19. Ansa-ru-deen High School, Sango, Ibadan.
20. Ansa-ru-deen Secondary School, Liberty Road, Ibadan.

B. Private Schools

1. Bodija International College, Ibadan.
2. Pathfinder College Samonda, Ibadan.
3. Reliance International High School, Arometa, Ibadan.
4. Moret Comprehensive College, Adamasingba, Ibadan.
5. Achievers High School, Bodija, Ibadan.
6. American Christian Academy, Ibadan.
7. The Apostolic Model College, Sango, Ibadan.
8. Oritamefa Baptist Model School, Ibadan.
9. The International School, U.I., Ibadan.
10. Esther Foundation Girls' High School, Ibadan.



Refuse Dumped Inside a Drainage, Along Yemetu Area, Ib.



Refuse Dumped At a Drainage Along Adekile, Orita Aperin, Ib.



Refuse Dumped At Road Median, At Sango Market.



Refuse Dumped At Road Median, Along Sango-Eleye Route.



Refuse Dumped At Road Median, At Sango Market.



Refuse dumped in adrainage along Farayola Street, New Bodija, Ibadan.



Packs of plastic bottles to be recycled



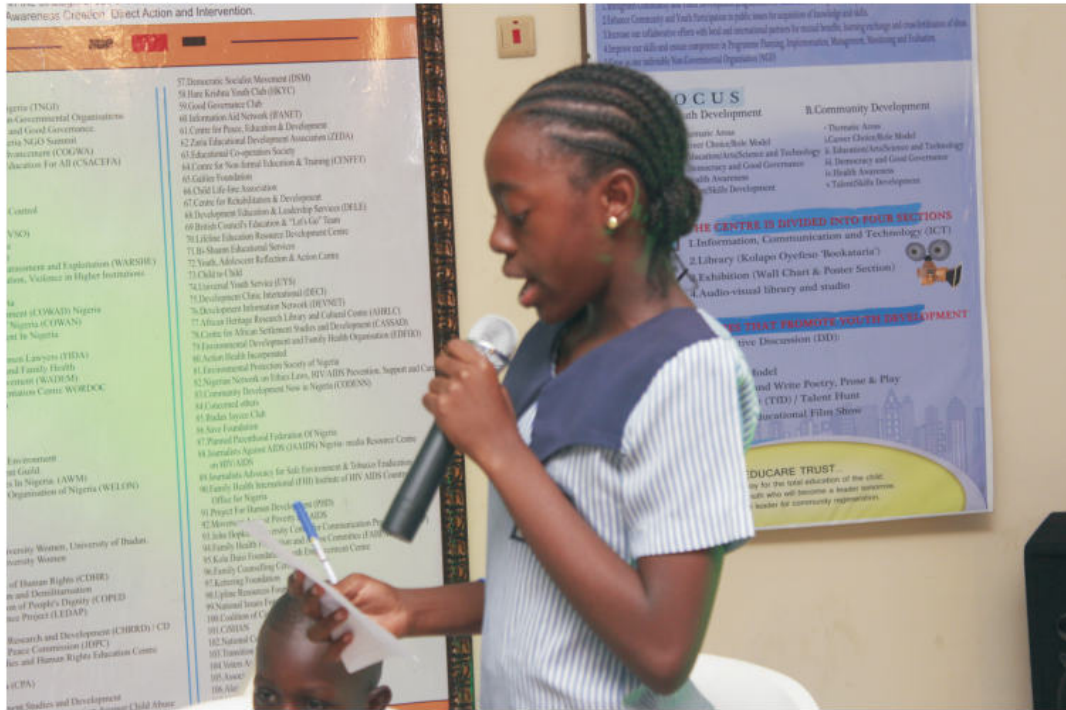
Collection of plastic bottles awaiting recycling



Waste to decoration: Trash (used tyres) re-used in beautifying the school compound



Waste to decoration: Trash (used tyres) re-used in decorating the school compound



Participants during Quiz Competition On Environment



Participants during Quiz Competition On Environment



Participants during Quiz Competition On Environment



Participants during Quiz Competition On Environment



Presentation OF Awards After Quiz Competitions



Participants during Debate Competition On Environment



Participant during Inter-School Debate Competition On Environment



Presentation Of Award After a Debate Competition On Environment.



Researcher Distributing Questionnaires To the Participants



Researcher With Participants Responding to Questionnaire Items



Resaercher Monitoring The Participants As They Respond To The Questionnaire



The researcher and research assistant monitoring the participants while responding to the questionnaire items



The researcher explaining the contents of the questionnaire to the participants



The researcher monitoring the participants while responding to the questionnaire items



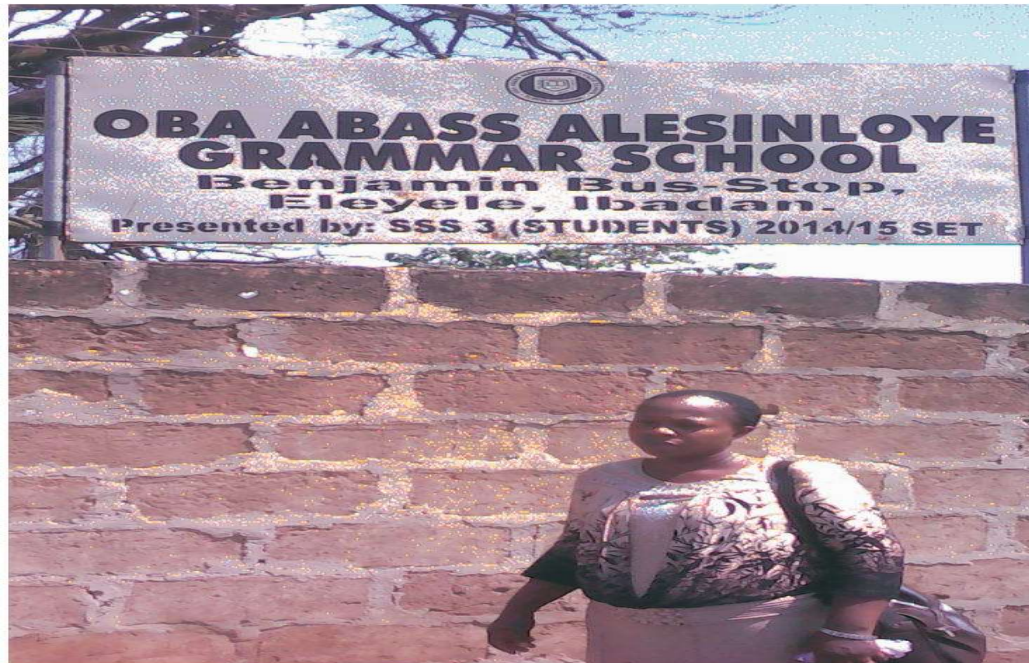
The Researcher at St. Brigid's Group of School, Mokola, Ibadan



Researcher At I.M.G Grammar School, Oje Igosun, Ibadan.



Researcher At Achievers High School, Bodija, Ibadan.



Researcher at Oba Abass Alesinloye Grammar School



The Researcher at Pathfinder College, Samonda, Ibadan.



The Researcher at Olubadan High School, Orita-Aperin, Ibadan.



The Researcher at Moret Comprehensive College, Adamasingba, Ibadan.



The Researcher at Adekile Goodwill Grammar School, Orita-Aperin, Ibadan.



The Researcher at St. Louis Grammar School, Mokola, Ibadan.



The Researcher at Sacred Heart Secondary School, Ode-Oolo, Ibadan.



Symposium During World Environment Day 2018 (Edition).



Commissioning Of Project(Convenency) Sponsored By School Environmental Club.



Participants During Drama Presentation On Environment



Participants Presenting Playlet On Environment



Youth Environmental Scout Ambassador For The Year 2018.

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

DEPARTMENT OF ARTS AND SOCIAL SCIENCES EDUCATION

Head of Department
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18th July, 2017

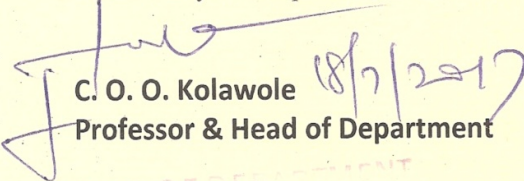
Dear Sir,

LETTER OF INTRODUCTION: ELIZABETH IKEOLA WAHAB

This is to introduce the above named person who is a Postgraduate Student (**Ph.D**) in the Department of Arts and Social Sciences Education, University of Ibadan. she is currently embarking on a research work and needs to visit your school.

Kindly assist her with regard to her request to carry out a research work which is part of her course work for the programme.

Thanks for your cooperation in advance.


C. O. O. Kolawole
Professor & Head of Department

OTHER PROFESSOR
J. O. Ajiboye

Our Vision:
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READER
F. O. Ezeokoli

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- To contribute to the transformation of society through creativity and innovation.
- To serve as a dynamic custodian of society's salutary values and thus sustain its integrity.