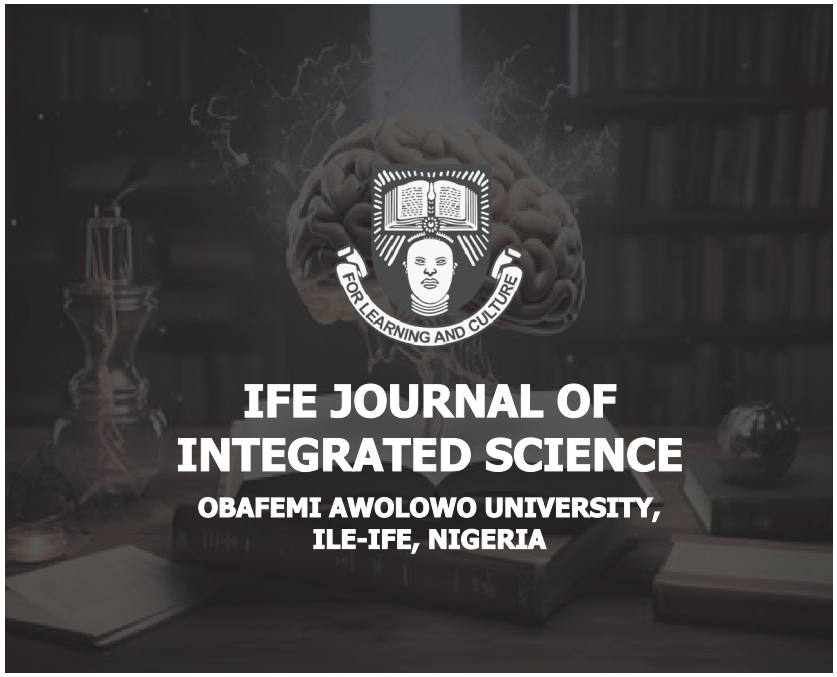

IJIS

Journal of the Institute of Education
Obafemi Awolowo University, Ile-Ife, Nigeria

ISSN: 3043-6400

Vol. 2, No. 1, 2025

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ENVIRONMENTAL LITERACY AMONG OSUN STATE CLASSROOM TEACHERS

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Abstract
The paper investigated environmental education literacy among Osun state primary school teachers. The study adopted descriptive survey research design. Study population comprised all primary school teachers in Osun State. The sample constituted 134 primary school teachers that were selected using multi stage sampling procedure. One research instrument tag Questionnaire on Environmental Education Awareness Campaign among Osun State Primary School Teachers (QEEACOSPST) was used for the study. The result showed that the primary school teachers' level of awareness of environmental education in Osun State is high at 61.2%. The result also showed that seminars and conferences are the predominant approach in sensitizing primary school teachers

towards environment education in the State with 59.7%. Finally, the result showed that environmental education awareness workshop had impact on primary school teachers' knowledge on environmental education in Osun State ($t = 2.819$; $p < 0.05$). The study concluded that primary school teachers had adequate knowledge of their environment in the state.
Keyword: Awareness, Education, Environment, Literary, Teachers.

Introduction

Environment: *means the surroundings or conditions in which a person, animal or plant lives or operates. It is also the natural world, nature, living world, the earth, ecosystem and biosphere. Environmentcan be seen to consist of two major components:* natural - atmosphere, hydrosphere, and lithosphere and biosphere environments and social or man-made environments. The environment in which people and other species live and interact with each other is a physical, social, economic and cultural setting (Ertekin, 2011). The environment has provided the best conditions for life for the past 3.8 billion years, taking into account the quantity and quality of water, an appropriate temperature, the quantity and quality of vegetation cover, natural resources, and all living things (Raven, Berg & Hassenzahl, 2012). Every single living thing depends on its environment to survive. Daily environmental degradation occurs either as a result of natural processes or human activities. Agboola (2014) identified some human daily activities that upsets the balance of the environment in the following ways: huge industrial installations, urbanisation, deforestation, over exploitation of natural resources, use of insecticides, pesticides, improper use of fertilizers and chemicals in environment and global warming/ozone layer depletion. However, today, environmental problems have been increased and the varieties of those problems that have been identified are air, soil and water pollution, acid raining and depletion of ozone layer. People's lives are in danger due to environmental issues like growing soil loss, the extinction of some species, desertification, and radioactive pollution

(Akkurt, 2007). Mining wastes and effluents from the metallurgical and mining sectors cause a variety of physical and chemical issues for people (Agboola, 2014). Akin (2014) asserts that pollution of various living materials, such as soil, water, and air, might upset the natural order and make it difficult to sustain life. Environmental pollution can have a direct impact on the natural environment and ecosystem that are essential for all species, according to Yücel (2006). If the environmental problems go on, ecosystem in which not only people but also other species are living cannot supply sustainable living conditions (Titiz, 1995). If these continues, the natural resources can be damaged because of environmental problems and in this sense there is not a chance to live for rising population.

Environmental Education (EE): is a learning process which increases people's knowledge and awareness about the environment and associated challenges, develop the necessary skills and expertise to address the challenges, foster attitudes, motivations and commitments to make informed decisions and take responsible action. Environmental education, in the opinion of Ahmad and Igbal (2020), is the process of recognizing values and clarifying concepts in order to build skills and additional tools essential to understand and respect the interrelationships among man, his culture, and his biophysical surroundings. It establishes an all-encompassing viewpoint that recognizes the interdependence of the natural world and man-made environments. It should be an ongoing, lifetime process that starts in early childhood and lasts through all stages, taking into account the environment in its whole. Major environmental issues should be examined from local, national, and worldwide perspectives, and it should be interdisciplinary. It should utilise various educational approaches to teach and learn about and from the environment with stress on practical activities and first-hand experience. It is through this process of education that people can be sensitized about the environmental issues; (Harris, 2006)

- ❖ Is concerned with building an environmental ethic;

- ❖ It enables to know him about the impacts of his activities on environment;
- ❖ It makes him know about different processes going on in the natural environment and their importance in keeping up the natural balance;
- ❖ It is through education that a person becomes able to have the knowledge about the status of different natural resources, needs and modes of their conservation;
- ❖ Education enables a person know about various processes of development and their impacts on environment; and
- ❖ Education enables a person to understand the phenomenon of Globalization and its impact on environment, economy and the social equality.

The goal of EE is to develop citizens who are aware of the total environment, concerned about it and its associated problems and which has the collective aims towards a solution of current problems and the prevention of new ones. The ultimate goal of EE is the "quality of the environment". It is also the improvement of the quality of life of man (IUCN, 1970; UNESCO-Tbilisi Declaration, 1978). EE is not a separate branch of science or subject but it has been formulated into a definite discipline with clearly defined content area and it should be carried out according to the principle of lifelong education (Finnish National Commission for UNESCO, 1974). EE caters for all ages and social-professional groups in the population.

The aim of EE is to enable people to understand the complexities of the environment and the need for nations to adapt and pursue their activities and development in ways which is harmonious with the environment. According to Igbinokpogie Ogbeibn and Ighrakpa (1990), EE is aimed at the acquisition of knowledge, skills, desirable attitude by an individual, towards a better interaction with the natural world. The main goal of environmental education is to increase people's awareness, knowledge, and ability to adopt a positive attitude toward environmental protection. It also trains them in problem-solving

techniques for the environment, allowing them to take part in activities carried out for environmental protection (Ahmad & Igbal, 2020). The many programs for raising awareness of environmental conservation among all members of society must be run by instructors in schools. When the populace has access to adequate education, these awareness campaigns are feasible. Thus, educators should help promote environmental education in society (Hassan, Juahir, & Jamaludin, 2009).The environment awareness should be initiated from primary to higher education to the public. It is generally agreed that the notion of environmental education should be interdisciplinary and draw from sources in the fields of biology, sociology, anthropology, economics, politics, and humanities. It is also generally agreed that the best way to teach environmental education is conceptually. The comprehensive definition of environmental education is formulated in the Tbilisi Conference held at Georgia in 1977 as Environment Education should; (Tbilisi Conference 1977)

- ❖ Consider the environment in totality.
- ❖ Be a continuous life long process beginning at the preschool level.
- ❖ Be interdisciplinary in its approach.
- ❖ Examine major environmental issue from the local national, regional and International point of view.
- ❖ Promote the value and necessity of co-operational energy level in the prevention and solution of environmental problems.
- ❖ Relate environmental sensitivity, knowledge and problem solving skills to every age but with special emphasis in early age.
- ❖ Help learners to discover the symptoms and real causes of environmental problems.
- ❖ Emphasize the complexity of environmental problems and thus need to develop critical thinking and problem solving skill.

Objectives of Environmental Education

The objective of EE may vary according to the values and

interest held by various bodies, and those advocating for it. Martin (1975) sees advocates of EE as falling into two categories (a) the conservationists and (b) educationist. The conservationist is more interested in the use of natural resources while the educationists are interested in implementation of EE curricular in schools.

The objectives of EE as outlined in UNESCO-UNEP (1989) are to

1. Awareness: EE should aim at sensitizing public by creating awareness about the total environment and its problems. This will help people gain insight into certain alternatives to environmental problems identified.

2. Knowledge: EE should aim at helping individual and social groups acquire experiences and knowledge about their environment and its associated problems. According to Martin (1975), learners should be made to identify the main features of any local environment where he finds himself, explain how these features interrelate, how they contribute to the character of the neighbourhood and perceive where modifications to the environment might be made.

3. Attitude: This objective should deal with helping the individual and social groups acquire social values, strong feeling of concern for the environment and motivation for actively participating in its protection and improvement.

4. Skills: This objective is aimed at making people acquire skills for identifying and solving environmental problems and also help individual seek a balance between short and long range implications when taking environmental decisions.

5. Participation: This is aimed at helping individuals and social groups develop a sense of responsibility and urgency regarding environmental problems to ensure appropriate action to help solve this problem.

Participatory objective will ensure that everybody become actively involved in solving environmental problems at all levels rather than leave the solutions to only environmentalist.

Environmental education is a method of teaching that aims to make students aware of the issues surrounding environmental knowledge and the dangers associated with pollution. Environmental education is socially significant because it enables us to understand how uncontrolled and unplanned development threatens our life by contaminating the air, water, and land. Environmental education is thus defined as the educational process that addresses how man interacts with his natural and artificial surroundings, including how population, pollution, resource allocation and depletion, conservation, transportation, technology, energy, and urban and rural planning relate to the entire biosphere (Patel & Patel, 1995).After the world summit in Johannesburg in autumn 2002, the United Nations designated the period 2005 to 2014 as the decade of "Education for Sustainable Development". To achieve sustainable development, it is necessary to change people's ecological, economic and social perceptions. The challenge that countries around the world therefore face is to integrate the concept of sustainable development in their education processes (World summit in Johannesburg 2002).

Environmental Education is a powerful sensitization tool for the conservation of Environment, its biodiversity and the sustainable use of natural resources. The focus should be on raising awareness among the student population through the instructors, who may play a fundamental role in disseminating the necessary knowledge and skills necessary to repair or at least halt the irreversible environmental damage being produced. Environment is a global concept today and the first in the environmental education is environmental awareness. Environmental awareness is an approach to learning. Action can be taken in a variety of areas to increase environmental awareness and education. Some of these categories are: environmental legal rights and responsibilities and associated consequences, use of the

media, awareness raising campaigns, incorporation of environmental issues in mainstream education, increasing awareness and education in target groups and encouragement of public participation in environmental matters. As the following case studies illustrate, many sectors of society are involved in developing and delivering educational courses and public awareness campaigns. These include Governmental institutions at the national, regional, and local levels; domestic and international NGOs; primary, secondary, and postsecondary schools; journalists and the media; celebrities; and other individuals and institutions. Moreover, educational and awareness efforts can target practically any sector of society. They can seek to raise public awareness broadly on environmental issues (e.g., through the media) the print, broadcast, and Internet media can be a powerful ally in educating the public on environmental matters (Prajapat, 1996). In order to perform this role effectively, it is often necessary for the Government to work with the media (and sometimes educate the media). This is often done informally, through regular briefings and information centres. Bedsides media, Traditional, religious, and local community leaders can play an influential or even decisive role in how people act. This is particularly true in rural areas.

Statement of the Problem

The most important reason of environmental problems and pollution is human (Agboola, 2014). The effect of human-being on the quality of environment and natural resources has been highly pointed (Karataş, 2014). For this reason, people have an important role for quality of life and sustainable development for environment. The most significant way for living healthy is having environmental awareness. People who have environmental awareness can protect the environment and they can make it better. For this process, the process of informing via education has a crucial role (Sidekli & Aktay, 2017). In this sense, education helps people to analyze environmental problems and to have necessary precautions. It is very essential for each individual to develop an awareness of protection and preservation towards environment. Our environment

is threatened due to many hazards, such as air, water and soil pollution is on the increase. Degradation of environment results in many problems. Therefore there is a great need to protect and preserve our environment. The role of teachers would go a long way in achieving such desired goals. Hence, the needs for awareness of primary school teachers who teach at primary schools since this might has a crucial role for the solutions of environmental problems. In order to hasten teachers' awareness towards environment, it is necessary to know the levels of awareness of these primary school teachers in the State towards their environment, hence, this study.

Purpose of the Study

The specific objectives of the study are to:

i. examine the primary school teachers' level of awareness of environmental education in Osun State;
ii. determine the approaches of sensitizing primary school teachers towards their environments in Osun State; and
iii. assess the significant difference in primary school teachers' knowledge on environmental education after exposure to environmental education awareness workshop in Osun State.

Research Question One

Two research questions were raised to guide the study

1. What is the level of awareness of Primary School teachers towards environmental education in Osun State?
2. What are the approaches of sensitizing primary school teachers towards their environments in Osun State?

Hypothesis

One hypothesis was generated for the study

$H_0$1: There is no significant difference in primary school teacher's knowledge on environmental education after exposure to environmental education awareness workshop in Osun State.

Methodology

The study adopted descriptive survey research design. The population comprised all the primary schoolteachers in Osun State. The sample constituted primary school teachers that were selected using multi stage sampling procedure. Three senatorial districts were selected from the state using simple random sampling technique. Five local governments were selected using simple random sampling technique. From the selected local governments, twelve schools were selected using simple random sampling technique. In the selected schools, 134primary school teachers were selected using simple random sampling technique. The total sample of (134) teachers were used for the study. One research instrumenttag Questionnaire on Environmental Education Awareness Campaign among Osun State Primary School Teachers (QEEACOSPST) was used for the study.

Questionnaire on Environmental Education Awareness Campaign among Osun State Primary School Teachers (QEEACOSPST) was used to assess the primary school teachers' knowledge on environmental educationin the study area. The questionnaire was divided into four main sections. The section A was to generate information on respondents personal data like: sex, age marital status, religion, academic qualification and year of teaching experience. Section B was to generate information on primary school teachers' level of awareness of environmental education and was based on four point Likert rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Section C was used to assess approaches of sensitizing primary school teachers towards their environments in the study area. In order to determine the content validity of the instrument, the instrument was given to the experts in test and evaluation department for review. Their observations and suggestions were used in the final preparation of the instrument. Reliability of the instrument was carried out in four (4) primary schools in a pilot study outside the scope of the study. A test-retest reliability method was used to generate two set of scores. Pearson Product Moment Correlation Statistics was used to calculate the

reliability coefficient of the instrument and was found to be 0.72. The data obtained were analysed using descriptive and inferential statistics. The research questions were analysed using frequency count and percentage. The hypothesis was analysed using T-test.

Results

Table 1: Descriptive analysis of socio-demographic information of the primary school teachers in Osun State

S/N	Variables		Frequency (f)	Percentage (%)
1	Sex	Male	116	86.6
		Female	18	13.4
2.	Age	18-25 years	1	0.75
		26-33 years	8	6.0
		34-41 years	38	28.4
		42years Above	87	64.9
3.	Marital Status	Single	10	7.5
		Married	111	82.8
		Divorced	3	2.2
		Widowed	8	5.9
		Single Parenthood	2	1.5
4.	Religion	Christianity	90	67.2
		Islam	42	31.3
		Traditional	2	1.5
5.	Academic Qualifications			
		NCE	82	61.2
		B.Sc.Ed/B.Ed/B.A.Ed	52	38.8
6.	Years of Teaching Experience			
		Less than 10years	31	23.1
		11-20years	41	30.6
		21years Above	62	46.3

N = 134

Results in Table 1 showed the descriptive analysis of socio-demographic information of the primary school teachers in Osun State. It can be gathered from the Table that 86.6% are males while 13.4% are females even as 0.75%, 6.0%, 28.4% and 64.9% of the respondents are in the age brackets of 18-25 years, 26-33 years, 34-41 years and 42 years above respectively. Also, 7.5%, 82.8%, 2.2%, 5.9% and 1.5% are single, married, divorced, widowed and single parenthood respectively even as 67.2% are Christians, 31.3% are muslims and just 1.5% are traditionalists. In the same vein, 61.2% are qualified academically with NCE while 38.8% had B.Sc.Ed./B.Ed./B.A.Ed. even as 23.1%, 30.6% and 46.3% have been teaching for less than 10 years, 11-20 years and 21 years and above respectively in the study area.

Research Question One: What is the level of awareness of primary school teachers' towards environmental education?

In order to answer this research question, data collected on the 7 items of Section B of the instrument on primary school teachers' awareness about environmental education were scored such that "Not at All Important" response was allotted 1, "Low Important" response was allotted 2, "Moderately Important" response was allotted 3, "Very Important" response was allotted 4 and "Extremely Important" response was allotted 5. The instrument has 7 items that were used to measure the teachers' level of awareness of environmental education. Responses from individual to each item were computed and the minimum and maximum scores obtained in this scale were 7 and 35 respectively. The teachers' level of awareness of environmental education on the scale 7-17 were adjudged as having "Low Level"; the teachers' level of awareness of environmental education on the scale 18-24 were adjudged as having "Moderate Level"; and the teachers' level of awareness of environmental education on the scale 25-35 were adjudged as having "High Level". The summary of the results is shown in Table 2.

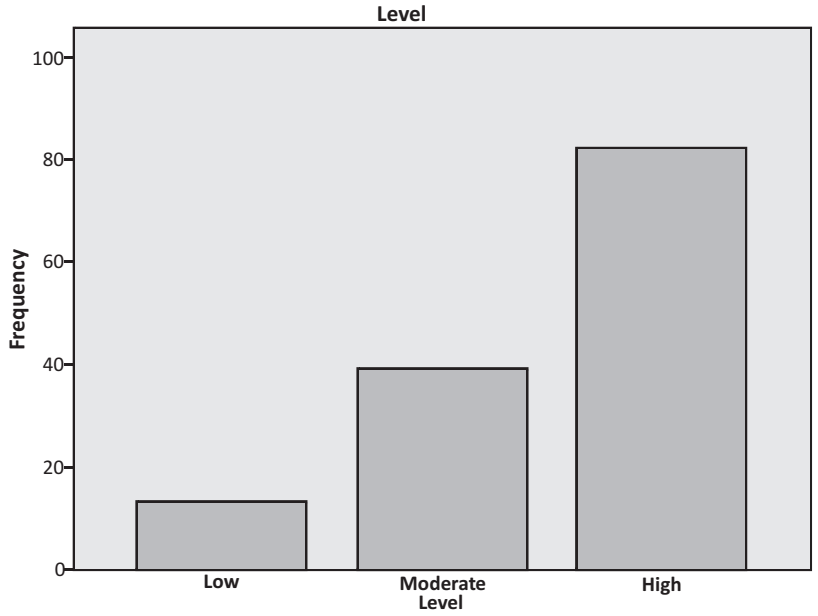
Table 2: Descriptive analysis of the primary school teachers' level of awareness of environmental education in Osun State

S/N	Level of teachers' awareness of environmental education	Frequency (f)	Percentage (%)
1.	Low	13	9.7
2.	Moderate	39	29.1
3.	High	82	61.2
Total		**260**	**100.0**

N = 134

Results in Table 2 showed the descriptive analysis of the primary school teachers' level of awareness of environmental education in Osun State. It can be observed from the Table that the primary school teachers' level of awareness of environmental education is high at 61.2% in Osun State.

Figure 1: Bar chart showing the primary school teachers' level of awareness of environmental education in Osun State



Research Question Two: What are the approaches of sensitizing primary school teachers towards their environments in Osun State?

In order to answer this research question, data collected on the 6 items of the various approaches of sensitizing teachers on environment were subjected to descriptive analysis. The results are presented in Table 3.

Table 3: Descriptive analysis of the approaches of sensitizing primary school teachers towards their environments in Osun State

S/N	Approaches	Frequency (f)	Percentage (%)
1.	Seminar and conference	80	59.7
2.	Short courses in environmental education	13	9.7
3.	Television and radio programmes	24	17.9
4.	Newspapers and magazines	9	6.7
5.	Internet	4	3.0
6.	SMS alert on Phone	4	3.0
Total		**134**	**100.0**

N = 134

Results in Table 3 showed the descriptive analysis of the approaches of sensitizing primary teachers towards their environments in Osun State. It can be deduced from the Table that 59.7%, 9.7%, 17.9%, 6.7%, 3.0% and 3.0% underlined the fact that seminars and conferences, short courses in environmental education, television and radio programmes, newspapers and magazines, internet and SMS alert on phone respectively are the various approaches of sensitizing primary school teachers towards their environments in the study area. However, seminar and conference is the predominant approach in sensitizing primary school teachers towards their environments in Osun State.

Testing of Hypothesis

Hypothesis One: There is no significant difference in primary school teacher's knowledge on environmental education after exposure to environmental education awareness workshop in Osun State.

In a bid to test this hypothesis, data collected on primary school teacher's knowledge on environmental education awareness workshop were subjected to analysis of paired sample t-test using the teachers' pre-test and post-test scores as dependent variable. The results are presented in Tables 4.2.

Table 4 Analysis of paired sample t-test of the primary school teacher's knowledge on environmental education awareness workshop in Osun State

Group	N	Mean	Sd.	Df	t	Sig
Post-test	134	61.37	10.22	133	2.819	0.006
Pre-test	134	58.13	9.72			

As seen in table 4.2, the mean of post-test scores of primary school teacher's knowledge on environmental education after exposure to environmental education awareness workshop was found to be $X = 61.37$ and the mean of pre-test scores of primary school teacher's knowledge on environmental education before exposure to environmental education awareness workshop was found to be $X = 58.13$. The study revealed that $t = 2.819$; $p < 0.05$. Hence, the null hypothesis that stated that there is no significant difference in primary school teacher's knowledge on environmental education after exposure to environmental education awareness workshop in Osun State is rejected. The result showed that environmental education awareness workshop had impact on primary school teachers' knowledge on environmental education in Osun State.

Discussion of Findings

The study showed that the primary school teachers' level of awareness of environmental education is high in Osun State. The finding corroborated with Sidekl and Aktay (2017) that

majority of pre-service primary school teachers were aware of environmental problems and that the awareness of pre-service teachers on this field was a satisfied level. The finding also concurTuran (2019) who stated that the attitudes of teacher candidates towards environmental problems were moderate and positive. However, the finding is not inconsistent with another study conducted by Güven and Aydoğdu (2011), as it was found out that pre-service teachers in Science Education Department were lowly aware of environmental problems.

Additionally, the study showed that seminar and conference is the predominant approach in sensitizing primary school teachers towards their environments in Osun State. The finding supported Turan (2019) who opined that due to the great importance of environment for our future that teachers who are the inevitable parts of the solution should teach their students how to be environmental friendly through seminars and workshop. However, the finding contradicted Agboola (2014) who suggested that the use of press media, awareness raising campaigns, incorporation in mainstream education (basic, secondary and tertiary), public participation in environmental matters, celebrities in media campaigns and civic education are some of the only ways by which environmental education can be foreshowed.

Finally, the result showed a significant difference in the primary school teachers' knowledge on environmental education after exposed to workshop on environmental education awareness campaign in Osun State. The result agrees with the finding of Yuan, Wu, Chen and Li (2017) who reported significant positive correlations between professional development and professional knowledge and competence; between teacher belief and professional knowledge and competence; and between teaching efficacy and professional knowledge and competence in environmental education. Furthermore, the findings corroborate Adawiah and Esa (2012) who revealed in their study that both primary and secondary schools in-service teachers in various field had overall knowledge about the concept of education for sustainable development and hold the power to change and can act

as change agent to create a better understanding about environmental education for sustainable development.

Conclusion

The study concluded that primary school teachers' level of awareness of environmental education in Osun State is high and seminar and conference are the prominent mode of sensitizing primary school teachers towards environment education in the state. The study further concluded that environmental education awareness workshop had impact on primary school teachers' knowledge on environmental education in Osun State.

Recommendations

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

- Government should organize Environmental Education campaign programmes for children, youth, men and women. The state government should establish appropriate funding mechanisms for raising public awareness on environmental education.
- Government can make significant contributions to improve public awareness of environmental education through seminars and conferences for the teachers.
- Some activities which will be helpful for service teachers in primary school level of education on increasing their awareness for synthesis and evaluation steps should be conducted.

References

Adawiah, R. & Esa, N. (2012). *Teachers' knowledge of education for sustainable development*. UMT 11th International Annual Symposium on Sustainability Science and Management, Terengganu, Malaysia, 823-827. Available at https://www.researchgate.net/ publication/2 63011209

Agboola, O. S. (2014). Environmental education and public awareness. *Journal of Educational and Social Research*,

4(3), 333- 337. Doi:10.5901/jesr.2014.v4n3p333.

Ahmad, M. & Igbal, K. (2020). Environmental education: An indispensable tool for public awareness. *International Journal of Research in all Subjects in Multi Languages*, *8*(4), 16-24.

Akın, G. (2014). İnsansağlığıveçevreetkileşimi. Ankara Üniversitesi Dil ve Tarih. *CoğrafyaFakültesiDergisi,54*(1), 10.

Akkurt, N. D. (2007). *AktifÖğrenmeTekniklerinin Lise 1. SınıfÖğrencilerininEkolojiveÇevreKirliliğiKonusunuÖğrenmeBaşarılarınaveÇevreyeYönelikTutumlarına Etkisi*. Unpublished Master Thesis, Gazi University Institute of Educational Sciences, Ankara.

Ertekin, K. G., (2011). AvrupaBirliğiÇevrePolitikalarıveSürdürülebilirKalkınmaArasındakiİlişkininDeğerlendirilmesi.

Güven, E. & Aydoğdu, M. (2011). Determination of candidate science teachers' knowledge levels towards environmental problems. *Procedia Social and Behavioral Sciences*, *15*, 2781–2784.

Harris, P.G. (2006). Environmental perspectives and behaviour in China. *Environment and Behaviour*. *38*, 1.

Hassan, A., Juahir, H. and Jamaludin, N.S. (2009). The level of environmental awareness among students to fulfil the aspiration of national philosophy of education. *American Journal of Scientific Research*,*5*, 50-58.

Igbinokpogie, J.O., Ogbeibn, A.E.&Ighrakpa, I.U. (1990). Environmental conservation strategy for Bendel State, Nigeria (A proposed Conservation education curriculum-formal and non-formal approach), PCEE Project Report. Jordanhill College Glassglow, UK.

Karataş, A. (2014). ÇevreSorunlarınaAlternatif Bir Çözüm Aracı OlarakYükseköğretimdeÇevreEğitimiNiğdeÜniversitesi. *The Second Symposium on Environment Morality, Proceedings Books, Adıyaman, Turkey*.

Martin, G.C. (1975). *A review of objectives of environmental*

education, insight into environmental education in Britain. Martin and Wheeler (Eds). Oliver and Boyd.

Patel, D. G. & Patel, N.A. (1995). An Investigation into the Environmental Awareness and Its Enhancement in the Secondary School Teachers. *The Progress of Education*, *69* (12), 256- 259.

Prajapat, M.B., (1996) *A study of the effect of programmes developing awareness towards environment among the pupils of standard ninth in Gandhinagar*. Gujarat, PhD Thesis, Sardar 15.Patel University, Indian Abstracts, 4, section 28, p.83.

Raven, P. H., Berg, L. R. & Hassenzahl, D. M. (2012). Environment. John Wiley & Sons, Ltd.: USA.

Sidekli, S. & Aktay, S. (2017). The awareness of pre-service teachers in primary school education deparment on environmental problems. *International Electronic Journal of Environmental Education*, *7*(2), 152-166.

Titiz, M. T. (1995). Çevresorunlarımı? Yoksaçevredekristalleşensorunlarmı? Yeni Türkiye Dergisi, Çevreözelsayısı (5), 53-57.

Turan, E. Z. (2019). Teacher candidates" environmental awareness and environmental sensitivity. *International Journal of Higher Education*, *8*(4) 202-207. Doi.org/10.5430/ijhe.v8n4p202

UNESCO-UNEP (1989). International environmental education programme, environmental module on environmental problems in cities, division of science, technical and vocational education.

Yuan, K-S., Wu, T-J., Chen, H-B., & Li, Y-B. (2017). A study on the teachers' professional knowledge and competence in environmental education. *EURASIA Journal of Mathematics Science and Technology Education*, *13*(7), 3163-3175. DOI 10.12973/eurasia.2017.00710a

Yücel, E. (2006). CanlılarveÇevre, Biyoloji. Editör: Ahmet Özata. T.C. Anadolu ÜniversitesiYayınları No: 1083.