Environmental Knowledge and Attitude of In-Service and Pre-Service Secondary School Social Studies Teachers in Osun State

By

S.O AJITONI, Ph.D

Abstract

This study examined environmental knowledge and attitude of in-service and pre-service secondary school teachers of Social Studies in Osun State. The study adopted a descriptive design of survey type. Simple random sampling technique was used to select 150 in-service teachers' drawn from all junior secondary schools, both public and private in Osun State and 150 pre-service teachers also drawn from the Social Studies Department in the Osun State College of Education, Ila-Orangun, Osun State. The instrument used for data collection was a structured questionnaire (r = 0.73). three hypotheses were tested at 0.05 level of significance. Data were analyzed using t-test statistics. Findings showed that in-service teachers had better knowledge of environmental education concepts than pre-service teachers; female teachers had more positive attitude towards environmental education concepts than the male teachers. was conducted to compare the mean values of the experienced social studies teachers and inexperienced teachers in knowledge of environmental education. It was found that there was a difference in the knowledge of in-service experienced teachers and pre-service inexperienced teachers in environmental education concepts. The findings further show that the pre-service and in-service social studies teachers' perception on provision of environmental education concepts in the College of Education was higher than the pre-services teachers. It is therefore recommended that there should be conferences, workshops and seminars on EE, while regular training in EE should be given to in-service and pre-service teachers of the various subjects in which EE concepts have been integrated.

Introduction

Social Studies as a discipline is concerned with human beings and the environments. That is, the reciprocal relationship between people and their environment. This implies that social studies deals with humankind's social, economic and political behaviours, at any place where people live or have lived, now or in the past (Lee, 2006). Thus, environment is more than the physical surroundings; it also includes the social and cultural aspects. Akinbote (2004) referred to environment as an aggregate of all the external conditions and influences affecting life and development of an organism. Generally, it is a place where people live and carry out their daily activities.

Over a long time, humankind's most significant achievements have been gained from the struggle to adjust process, human has progressed, no doubt, but at the cost of the social, biotic and physical environments because the self-healing character of nature is not infinitely tolerant. In the present-day civilization, people have witnessed environmental problems arising out of overpopulation, depletion of natural resources, food shortages,

sprawling cities and metropolis and the resultant pollution (Oladapo, 2011). There is now the general awareness that human's environment is under serious threats (Ajiboye &Ajitoni, 2008). Almost all the natural resources, visible and invisible, have been depleted. All these things happen as a result of human's interference with the environment. Ozone layer depletion and global warming, deforestation, flood, pollution, erosion, natural disaster of various kinds and magnitude are familiar concepts of our present generation (Gbadamosi, 2011). All these come directly or indirectly from human's use of the environment.

Solutions to the crisis facing human beings today can be appreciated and understood only by obtaining awareness and a basic background in some environmental concepts, which are essential aspects of Social Studies Education. However, one of the objectives of Social Studies Education, as stated by Ajiboye (2003), is the creation of awareness and the understanding of human's evolving physical and social environment in its natural, human-made, cultural and material resources, and the rational use and conservation of the resources for national development. Perhaps, it is in an attempt to achieve this objective of Social Studies as well as other related ones, that is, the understanding of human's evolving physical and social environment and the rational use and conservation of its resources, that environmental education (EE) concepts have been integrated into the Social Studies Curriculum.

Aina (1994) observed that global problems are being aggravated by a combination of localized environmental problems such as deforestation, soil erosion, and industrial pollution to mention but few. All these problems are enough to heighten people's feelings about the need for positive contribution toward the resolution of the problems of the environment. This, however, cannot be achieved by mere fiat or admonition nor rhetoric alone but by concerted efforts of the right orientation regarding the knowledge and attitude of people, particularly teachers and students who are charged with the responsibility of teaching and learning social studies in schools. Environmental Education (EE) is yet to be included in school Curriculum as a discipline on its own, especially at post-primary and colleges, in Nigeria. Nevertheless, because of its importance which has been realized as a result of environmental problems, some of which were mentioned earlier, the subject is now being integrated into other school subjects, such as Social Studies, Biology, Geography and the sciences (Olagunju, 1998).

Effective environmental education demands much from those who teach it. The training of these educators in environmental education concepts as well as their knowledge of environmental issues and problems is, therefore, of paramount importance (Stronhorst, 1992). The pre-service teacher forms one of the most important and significant aspects in the development of environmental education programmes and teacher training in environmental education. Meredith, (2000) suggested that the teaching of environmental education must first start with teacher educators because a thorough training of teacher educators in environmental education will be more focused and more likely to lead to success in the bid to solve environmental problems. If teacher educators are well trained in environmental education they will be proficient at explaining environmental education concepts to teacher trainees. Apart from knowledge acquisition,

teacher educators who are to teach environmental education must have a working knowledge of environmental education methods and this depends on their own pre-service training. Training teachers in environmental education should, therefore, include both pedagogical content knowledge and subject matter knowledge, both of which are central to teaching Meredith (2000).

Ajitoni (2005), Ajiboye and Ajitoni (2007) stressed the role of education in solving the society's endemic environmental problems. If education must be used to solve these problems, perhaps it should start with teachers and learners. In this wise, teachers can be grouped into in-service and pre-service teachers. In-service teachers are the teachers who have acquired the knowledge and are imparting such to the learners. Pre-service Teacher Education is the education and training provided to student teachers before they have undertaken any professional teaching. An effective environmental education programme for pre- service teachers is the one that provides skills with which people can investigate and evaluate environmental problems and undertake appropriate actions within their community (Stronhorst, 1992).

Palmer (1998) further reviewed that the positivist philosophy views the purpose of EE as transmission of knowledge about the environment. It views the learner's (pre-service) role as passive recipient. The instructor's (in-service) role is viewed as the authority-in-knowledge. The interprevist vision focuses on activities in the environment with students learning actively through experiences and teachers organizing the experiences. Finally, the critical philosophy of EE views its purpose as action for the environment. Learners are active generators of new knowledge and instructors serve as collaborative participants/inquirer. At the center of this model are the learning processes and curriculum elements driven by knowledge and understanding, concepts, skills and attitude. Planning for such a curriculum model requires the interaction of concern, experience, and action. This model, according to Palmer requires appropriate tasks that provide students with "experiences in problem-solving, decision-making and participation in decisions concerning the environment with considerations based on ecological, political, economic, social, aesthetic and ethical aspects".

Environmental education concept is grounded with the view of teaching "creative and dynamic process in which pupils and teachers are engaged together in a search for solutions to environmental problems". However, it is not only the students who need support engaging in this research but the teachers in creating dynamic, rigorous exploration of environmental issues. A recent study (Fleming, 2009) identified key areas of need for professional development in environmental education; among these are: involving communities in environmental and health initiatives, networking opportunities for teachers to share best practices, strategies and techniques for teaching students critical thinking skills, and integrating EE into secondary school curriculum.

However, many teachers, while interested in engaging students in EE, struggle with successful integration, whether in the classroom or in connecting students to out-of-classroom fieldwork opportunities. Teachers are to develop and implement curriculum or use materials from professional development experiences. This study strives to support teachers and students in developing environmental education that "promote(s) the development of responsible and active citizens who are invested in environmental issues and

situations, and who are empowered by their ownership of knowledge and skills."

Research findings indicate conflicting evidences on the knowledge and attitude of male and female Social Studies teachers and students in relation to environmental issues and problems. Some believed that female teachers and female students show more concern when it comes to environmental issues and problems than their male counterparts (Kissork, 1997, Arcury 1987). This is based on the argument that, from childhood, women are socialized to be family nurturers and care givers. The nurturing attitude that result from this socialization are translated into attitude toward nature and environment and thus more protective than that of their male counterparts. This is to say that female Social Studies teachers and female students possess more positive attitude towards the teaching and learning of environmental education concepts than the male social studies teachers and students. Others, such as Bernard, 2002, Gottelmann-Duret, 1998 and Hedges, 2002, attested to the preponderance of male teachers as well as male students more positive environmental attitude than female counterparts. As effect, the influence of gender on social studies teachers and students' environmental knowledge and attitude was assessed.

The usefulness of social studies in problem solving will continue to be appreciated by both the government and the individual. Among the problems which the subject is out to solve, pertains to the environment. This has made it necessary to undertake an assessment of the competence of social studies teachers in terms of their knowledge and attitude in teaching environmental education concepts as represented in the Junior Secondary School and learning the concepts in colleges of education.

Statement of the problem

Environmental problems have pervaded many societies in the world today. These problems have been seen to emanate from people's low knowledge and poor attitude towards the environment. Education has been seen as a means of changing long-established attitude and behaviour. This education is to be given by the school where teachers teach and students learn. However, the understanding of a thing is a necessary condition for forming an attitude and practicing it. If teachers are to teach and learners are to learn, teachers must possess the knowledge to teach and this is determined, among other factors, by their experience, and the students' readiness to learn. Studies have confirmed strong relationship between teachers' knowledge of and attitude to EE concepts and effective teaching of concepts and effective teaching of the concepts. However, most of these studies are located outside the shores of Nigeria, without assessing their impact in Osun State, Nigeria. This study therefore assessed pre-service and in-service teachers' knowledge of and attitude to environmental education concepts in social studies in Osun State.

Hypotheses

Ho1: There is no significant difference between in-service and pre-service teachers' environmental knowledge and attitude in Osun State.

Ho2: There is no significant difference between male and female in-service teachers' environmental knowledge and attitude in Osun State.

Ho3: There is no significant difference between male and female pre-service teachers' environmental

knowledge and attitude in Osun State.

Methodology

This study adopted a descriptive design of survey type. Simple random sampling technique was used to select 150 in-service teachers drawn from all junior secondary schools, both public and private in Osun State and 150 pre-service teachers also drawn from the Social Studies Department in the Osun State College of Education, Ila-Orangun, Osun State. The instrument used for data collection was a structured questionnaire. Basically, the questionnaire had two sections (A and B). Section A of the questionnaire dealt with personal data information of the respondents, their sex, qualifications and age. Section B sought information on the pre-service teachers and in-service teachers. The reliability index of the question for pre-service teachers was 0.73 while the mean for in-service teachers was 0.75. Three hypotheses were tested at 0.05 level of significance. Descriptive analysis of frequencies and percentages were used to analyze the demographic information, while -test analysis was used to test the significant differences as stated in the hypotheses.

Results

Analysis of hypotheses

Ho1: There is no significant difference between in-service and pre-service teachers' environmental knowledge and attitude in Osun State.

Table 1: Summary of the t-test analysis of difference between in-service and pre-service teachers' environmental knowledge and attitude in Osun State

Groups	N	X	SD	Df	t-cal	t-tab	P	Decision
Pre-service teachers	150	2.17	0.46	299	16.8	1.64	0.05	**Ho: Rejected**
In-service teachers	150	4.92	1.46					

t-cal = 16.8, t-tab = 1.645
df = 299, 0.05 level of significance

From the analysis in table 1 above, there is significant mean difference in the mean scores of pre-service (N = 150, X = 2.17, SD = 0.46) and in-service (N = 150, X = 4.92, SD = 1.46) teachers' environmental knowledge and attitude in Osun State. The students' t-test analysis also revealed that the t-cal value 16.8 is greater than the t-tab value of 1.645 at 0.05 level of significance. Since the calculated value (16.8) is greater than the table value (1.645), the null hypothesis which stated that "there is no significant difference between in-service and pre-service teachers' environmental knowledge and attitude in Osun State", is hereby rejected. Consequently therefore, an alternate hypothesis that states "there is a significant difference between in-service and pre-service teachers' environmental knowledge and attitude in Osun State" is hereby adopted instead.

Ho2: There is no significant difference between male and female in-service teachers' environmental knowledge and attitude in Osun State.

Table 2: Summary of the t-test analysis between male and female in-service teachers' environmental knowledge and attitude in Osun State.

Groups	N	X	SD	Df	t-cal	t-tab	P	Decision
Male (In-service Teachers)	33	2.63	1.73	43	1.02	11.645	0.05	**Ho: Rejected**
Female (In-service Teachers)	11	6.78	5.78					

t-cal = 1.02, t-tab = 1.645
df = 43, 0.05 level of significance

From the analysis in table 2 above, there is significant mean difference between Male (In-service Teachers) (N = 33, X = 2.63, SD = 1.73) and female (In-service) (N = 11, X = 6.78, SD = 5.78) teachers' environmental knowledge and attitude in Osun State.. The students' t-test analysis also revealed that the t-cal value 1.02 is lower than the t-tab value of 1.645 at 0.05 level of significance. Since the calculated value (11.02) is lower than the table value (1.645), the null hypothesis which stated that "there is no significant difference between male and female in-service teachers' environmental knowledge and attitude in Osun State", is hereby rejected not rejected. Hence, an alternate hypothesis that states "there is a significant difference between male and female in-service teachers' environmental knowledge and attitude in Osun State." is hereby adopted instead.

Ho3: There is no significant difference between male and female pre-service teachers' environmental knowledge and attitude in Osun State.

Table 3: Summary of the t-test analysis between male and female pre-service teachers' environmental knowledge and attitude in Osun State.

Groups	N	X	SD	df	t-cal	t-tab	P	Decision
Male (Pre-service Teachers)	41	2.33	0.65	149	10.35	1.645	0.05	**Ho: Rejected**
Female (Pre-service Teachers)	109	6.11	1.83					

t-cal = 10.35, t-tab = 1.645
df = 149, 0.05 level of significance

From the analysis in table 3 above, there is a significant mean difference between Male Pre-service (N = 41, X = 2.33, SD = 0.65) and female Pre-service (N = 109, X = 6.11, SD = 1.83). The students' t-test analysis also revealed that the t-cal value 10.35 is greater than the t-tab value of 1.645 at 0.05 level of significance. Since the calculated value (10.35) is greater than the table value (1.645), the null hypothesis which stated that "There is no significant difference

between male and female pre-service teachers' environmental knowledge and attitude in Osun State", is hereby rejected. Consequently therefore, an alternate hypothesis that states "There is a significant difference between male and female pre-service teachers' environmental knowledge and attitude in is hereby adopted instead.

Discussions of the findings

Findings showed a significant difference between the knowledge and attitude of male and female pre-service and in-service teachers towards environmental education concepts. This result is in line with the finding, according to observation shows that women are more concerned about environmental issues than men stemmed out of the various theoretical explanations of gender differences in Environmental concern (Arcury 1987, Block and Eckber, 1989). The argument that is advanced for this is that from childhood women are socialist and family nature and care giver, this underscores their concern and attitude about a wide range of school issues such as poverty, homelessness and racial discrimination. This attitude are meant to influence their immediate nature and environment that are more protective than those of their men counterparts. This often reflect in the role women assume in their adult life as home maker and mothers unlike the men that are socialize in their adult life as family bread winners and resources provider. The study here shows that women tend to show or express greater concern than men about local environmental issues.

Result shows that in-services teachers' knowledge of the provision of Environmental Education concepts was higher than the pre-services teachers. It was then concluded that there is a difference in the perception of the in-services teachers and pre-services teachers on provision of Environmental Education concepts. Also, the results of findings shows majority of Pre-Service teachers would be successful in teaching of Environmental Education in future. Majority of the pre-service teachers also agreed that they have not been well trained in Environmental Education Methodologies. Sia (1992) also noted after his research on pre-service elementary teacher's perceived efficacy in teaching environmental education that there is the need to address training in environmental education teaching among pre-service teachers by either integrating environmental themes across disciplines or through a separate course. Wahistron (1991) also made his contribution towards peace and environmental responsibility. Meredith, et al (2000) suggested that the teaching of Environmental Education must first start with teacher educators because a thorough training of teacher educators in Environmental Education will be more focused and more likely to lead to success. If teacher educators are well trained in Environmental Education they will be proficient at explaining Environmental Education concepts to teacher trainees. However, teacher educators who are to teach Environmental Education must have a working knowledge of environmental education methods and this depends on their own pre-service training.

Conclusion

The in-service teachers demonstrated an adequate knowledge and level of understanding of EE concepts than pre-service teachers (although there is still much room for improvement). It is also concluded that in-service and pre-service female social studies teachers disposed positive attitude to the teaching of environmental education than their male counterparts. Pre-service teachers do not perceive

themselves to be effective in teaching EE when they complete their training. Consequently, EE has permeated few subjects college curriculum and this has contributed to delays in the development of EE courses, since the quality and preservation of the environment depends on the education its people have received. The results of the study suggest that colleges of education in Nigeria have not been successful in developing EE courses. Urgent action is thus required in the field of teacher training. Attention has been called to the fact that one of the major constrains to the implementation of EE in the school curriculum in developing countries is the lack of adequate trained personnel.

Moreover, teachers have also manifested attitude which may well be inimical to a healthy environment. If such teachers were to be called upon to teach EE, the results could be fairly well predicted. Judging from the prevailing environmental problems in the world. Nigeria should join other nations in teaching her citizens environmental related concepts so as to make them knowledgeable in environmental management and sanitation.

Recommendations

Based on the findings of this study, the researcher wish to make the following recommendations:

1. Regular pre-service training in EE should be given to teachers of the various subject into which EE is to be integrated. This is based on the premises that the subject had hitherto not been taught as a discipline in the history of the country until the time of the conception of the idea of its introduction.
2. School management should encourage goals accomplishment by contingently linking performance to extrinsic outcomes and fostering intrinsic outcome in Environmental Education.
3. The study of Environmental Education should not be limited to Social Studies teachers in junior secondary school and Pre-service of teachers in college of Education but also extended to Senior School and Higher Institution of learning in state and Federal
4. International organizations like UNESCO and WHO should give necessary assistance and aids to countries. In respect of this, EE courses for colleges of education should be developed and be implemented in a timely manner to ensure that pre-service teachers graduate with required environmental competencies.

References

Ajiboye, J.O 2003. Providing Training on Good Governance for Secondary School Pupils. Implications for Nation Building Nigeria. *Journal of Social Studies* Vol. Ill (2)

Ajiboye, J. O and Ajitoni, S. O. 2008. Effect of full and quasi-participatory learning strategies on Nigerian senior secondary school students' environmental knowledge: Implications for classroom practice. *International Journal of Environmental & Science Education, 3(2) 58-66*

Ajiboye, J. O and Ajitoni, S. O. 2007. Exploring the use of participatory strategies in developing environmental attitudes in Nigerian children: Implications for EE teaching and learning. *The Social Sciences.* 2(1).

Ajitoni, S. O. 2005. Effects of full and quasi-participatory learning strategies learning strategies on Nigerian Senior Secondary school students' environmental knowledge and attitudes in Kwara state, Nigeria. Unpublished Ph.D Thesis submitted to the Department of Teacher Education, University of Ibadan, Ibadan, Nigeria.

Akinbote, O. 2004. *Pre-primary and Primary Education in Nigeria: A Basic Text*. Ibadan. Stirling Horden Publishers (Nig.) Ltd.

Arcury, T.A 1987. Sex Difference in Environmental Concern and knowledge: The Case of Acid Rain. *Sex Role* 16 (9110) 463 - 472.

Audu, U.F. 1993. *Teachers' Knowledge, Attitude and Practices Regarding Environmental Education*. M.Ed. Dissertation. Dept. of Teacher Education, University of Ibadan.

Aina, E 1994 Action to Tackle Environmental Problems in Nigeria: *The Nigerian Environment. FEPA Quarterly Newsletter,* Vol. 6, No 3, P 1.

Bernard, A. 2002. *Lessons and implications for girls' education activities: A synthesis from evaluations*, Evaluation Office, New York: UNICEF.

Gbadamosi, 2011. *A Handbook on the Foundation of Social Studies*. Lagos ACE Publishing Company.

Gottelmann-Duret, G. & Hogan, J. 1998. *The utilization, deployment and management of teachers in Botswana, Malawi, South Africa and Uganda*. Paris: UNESCO.

Lee, 2006. *Teaching Social Studies in Elementary School*. New York: The Free Press.

Meredith, J., Cantrell, D., Conner, M., Evener, B., Hum, D., & Spector, P. (2000). *Best Practices for environmental Education: Guidelines for success*. Ohio: Environmental Education Council of Ohio.

Oladapo, 2011. *Fundamental of Environmental Education*. Addison: Wesley Publishing.

Olagunju, A. M. 1998. The impact of two curriculum packages in environmental education in Biology on learners' performance, problem-solving abilities and environmental attitude. Unpublished Thesis, University of Ibadan, Ibadan.

Palmer J. 1998. Environmental education in the 21st century: Theory and practice, progress and promises. New York: Routledge.

Sekar, T. 1988. Role of newspapers in Creating Mass Concern with Environmental Issue in India. *Journal of Environmental Studies* Vol. 33, Number 2.

Sia, A.P. 1992. Pre-Zenice Elementary Teachers Perceived Efficacy in Teaching Environmental Education: A Preliminary Study, *A Paper read at the Annual Meeting of the ECO.ED, North American Association for Environmental Education*, Ontario Canada October 20th.

Stronkhorst, R. 1992. *Knowledge and beliefs of students concerning environmental issues*. Unpublished paper. University of Botswana. Gaborone.

Tbilisi, 1978. The Concept of Environmental at Education *Journal of Environmental Education* 1 (1) 3031 UNESCO.

United Nations Conference on Environment and Development. 1992. Agenda 21.

United Nations Educational Scientific and Cultural Organization (UNESCO) 1977. Final Report - Intergovernmental Conference on Environmental Education. Tbilisi.

United Nations Educational Scientific and Cultural Organization (UNESCO). 1997. International conference on environment and society: education and public awareness for sustainability, Declaration of Thessaloniki.