ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

EFFECTS OF SERVICE LEARNING AND EDUCATIONAL TRIPS IN SOCIAL STUDIES ON PRIMARY SCHOOL PUPILS' ENVIRONMENTAL KNOWLEDGE FOR SUSTAINABLE DEVELOPMENT

Ajitoni, S.O
Teacher Education Department,
Faculty of Education,
University of Ibadan,
NIGERIA.

Gbadamosi, T.V
Emmanuel Alayande College of Education, General Studies in Education, Oyo State,
NIGERIA.
samtiv2006@yahoo.com

ABSTRACT

The study examined the effects of service learning and educational trips in social studies on primary school pupils' environmental knowledge for sustainable development in four Local Government Areas of Oyo Metropolis, Oyo state of Nigeria. Two null hypotheses were formulated and tested at 0.05 level of significance. The study adopted a pretest- posttest control group quasi experimental design. Environmental knowledge test was used to elicit responses from 264 primary 5 pupils from 12 schools purposively selected. The data generated was analysed using Analysis of Covariance, Multiple Classification Analysis and Sheffe Post Hoc Test. It was found that there was significant main effect of treatment on pupils' environmental knowledge. Also, there was no significant main effect of gender on pupils' environmental knowledge. The probable reasons for the findings and their implications on sustainable development in Nigeria are further discussed in this paper.

Keywords: educational trips, enviourmental knowledge, social studies

INTRODUCTION

Human beings, men and women, by themselves and in groups, by acting wisely and unwisely in the past and in the present, have caused damage to the human environment and have created a lot of social problems (Agunbiade, 2007). The impact of contemporary human life on the environment has caused two interrelated social problems: pollution and resource depletion (Agunbiade, 2007). The degradation of the environment no doubt constitutes a great threat to both human and material resources (Sabella, 2009; Gbadamosi, 2005). Every nation was therefore more sensitive to environmental problems and continues to promote and develop Environmental Education programmes as recommended at the United Nations (UN) General Assembly's adoption of a Decade of Education for Sustainable Development in 2002. It was in recognition that current economic development trends are not sustainable and that public awareness, education, and training are key to moving society toward sustainability (Tilbury, 2006). It is envisaged that the introduction of environmental education into the school curricula such as Social studies, Integrated science, Biology and so on will develop citizens who will run a sustainable development. The World Commission on Environment and Development (WCED, 1987) defines sustainable development as ability to meet the need of the present without compromising the ability of the future generations to meet their own needs.

The rationale for teaching Social Studies is premised on the ability of the curricular area to contribute to the solutions of environmental problems resulting from human behaviour and to foster appropriate citizenship values (Ajitoni, 2005). A sustainable effort is, therefore, needed to help avert the consequences of these environmental problems. The first action points are school children whose are in their formative stage and receptive to learning. Also they are the future leaders, hence the need to catch them young by equipping them with skills to make environmentally sound decisions rather than change the negative attitude already formed by the adults.

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

The peculiar requirements of environmental education and education for sustainable development call for innovative methods in view of our emerging information society (Tilbury, 2006). Indeed nobody really knows how to meet the new demands of sustainability, and what is required is a social process that involves people in creating a new way of living a good life, that is equitable and that safeguards diversity, productivity and resilience of the ecosystem (Tilbury,2006). This calls for new processes of instruction that is likely to drive home the messages faster and deeper than the traditional teacher-dominated classroom teaching which failed to bring optimal learning. Instructional strategies like service learning and educational trips that present learners with options and critical thinking for action are also likely to be more successful in promoting sustainable living (Smith and Sobel, 2010). The study examined whether service learning and educational trips instructional strategies would increase environmental knowledge among pupils.

Hecht (2002) describes service learning instructional strategy as an experiential instructional strategy that provides students with the opportunity to apply both academic and non-academic skills in real-life situations towards a common cause and identifiable goal in the community. Moreover, Service-learning is an instructional strategy that engages young people in solving problems within their schools and communities as part of their academic studies or other type of intentional learning activity. Billig, Root and Jesse, 2005; Billig 2000; Berkas, 1997 reported that Service Learning had impact on students' social development, civic responsibility, career interests and solving environmental problems. However, the literatures reviewed revealed that service learning and educational trips instructional strategy has not been effectively utilized in Nigeria unlike Developed Countries such as United States of America and Britain in developing environmental knowledge among the citizens.

On the other hand, educational trips are learning experiences that involve taking learners out of school to places where students can observe first hand and study in a real life setting (Mezieobi, Fubara and Mezieobi, 2008). Abolade (2001); reported that educational trips provide opportunity for learners to explore their environment and foster school- community relation. It expose pupils to different forms of activities which include discussing critical environmental issues and problems; visiting sites such as markets, forests, dumpsites and riversides.

It is against this background that the study examined on how to use service learning and educational trips instructional strategy in the teaching and learning of Environmental Education for sustainable development. In view of the enormous impact of social studies education in the Nations sustainable development, this study therefore investigated the effects of service learning and educational trip in social studies on primary school pupils' environmental knowledge. It also explored the extent to which gender interacts with the environmental activities to influence environmental knowledge of the pupils in Social Studies.

HYPOTHESES

H_{o1}: There is no significant main effect of treatment on pupils' environmental knowledge.

H_{o2}: There is no significant main effect of gender on pupils' environmental knowledge.

METHODOLOGY

Research Design

The study adopted a pretest- posttest, control group quasi-experimental design.

Sample and Sampling Technique

The study involved 264 (139 male and 125 female) primary 5 pupils from twelve public primary schools purposively selected from Atiba, Afijio, Oyo West and Oyo East Local Government Areas of Oyo Metropolis of Oyo State. Intact classes were used. The schools were assigned to treatment groups by simple random sampling technique. The study covered concepts like types of resources: renewable and non- renewable; environmental problems (a) pollution (b) soil erosion and (c) deforestation.

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

Instrumentation

Five research instruments were used to generate and collect data for the study. Environmental Knowledge Test is a multiple choice test with two sections adapted from Venas and Doris (2006). It had been validated by the developer and reliability coefficient calculated was 0.80. But to ensure that the instrument maintain its status, face and content validity were re-examined using experts review and the internal consistency reliability measure was calculated using Kuder-Richardson 20 (KR20) which yielded a reliability value of 0.86. Also, Teachers Instructional Guide for control group, Service Learning project planning worksheet Guide for Experimental group 1, Educational Trips Guide for Experimental group2 and Environmental Education Module were designed by the researchers to sensitize and enlighten facilitators and validated using experts review.

Procedure

The teachers were trained by the researchers for two weeks. Environmental Knowledge Test was administered to the pupils before the treatment as pre-test, after which all the groups were exposed to the treatment the same time for eight weeks. Thereafter, post-test was carried out to determine effect of the treatments.

Pupils in Experimental group 1 were exposed to service learning instructional strategy. The teacher selected the concept and set learning objectives. The teacher guided pupils to link the concept with environmental issue in the school and community used. Pupils discussed the problem and developed a work plan on how to solve the problem identified. Pupils developed reflection activities and carried out the service. Thereafter, reflected on service carried out and had presentations on activities carried out.

Pupils in Experimental group 2 were exposed to Educational Trip Instructional Strategy. The pupils were taught using Educational Trip Instructional Guide. The teacher choose the lesson, discussed the lesson briefly with the pupils in the classroom, conveyed the pupils to study site, discussed with the pupils in the field and thereafter had follow up in the class wherein pupils reported what they learnt at the field.

Pupils in Control group were taught by the classroom teachers using lesson guide without exposing them to activities outside the classroom.

Data Analysis

Data collected were analysed using Analysis of Covariance (ANCOVA) in testing hypotheses, using pre- test as covariates. The Multiple Classification Analysis (MCA) was used to determine the magnitude of the performance of the various groups. Scheffé Post hoc analysis was carried out to determine the source of significant effect of treatment. All hypotheses were tested at 0 .05 level of significance.

RESULTS

H_{o1}: There is no significant main effect of treatment on pupils' environmental knowledge.

Table 1: Summary of ANCOVA of Post Test Environmental knowledge Scores by Treatment and Gender

Source of Variance		Hierarchical Method Sum of Squares	Df	Mean Square	F	Sig.
Covariates	PRETEST	3.01	1	3.01	.47	.49
Main Effects	(Combined)	384.94	4	96.24	14.99	.00
	TREATMENT	384.79	2	192.40	29.98	.00*
	GENDER	9.64E-05	1	9.64E-05	.00	.99

Significant at $P < 0.05$

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

F Table 1 presents the findings of the study with respect to the effects of treatment, and gender on pupils' environmental knowledge.

rom Table 1, there is significant effect of treatment on pupils' environmental knowledge ($F_{(2,251)}$ =29.98; $p < 0.05$). This means that the adjusted post test scores of pupils in the two experimental groups and control are significantly different. Hence, hypothesis 1is rejected. Table 1 shows the magnitude of the mean scores according to the treatment groups and gender.

Table 2: Multiple Classification Analysis of Environmental knowledge Scores According to Treatment and Gender

Grand mean=12.41

Treatment + category	N	Predicted Mean		Deviation		Eta	Beta
		Unadjusted	Adjusted for factors and covariates	Unadjusted	Adjusted for factors and covariates		
TREATMENT							
Service learning	87	12.43	12.42	1.99E-02	1.75E-02		
Educational trips	83	13.96	13.97	1.56	1.56		
Control	94	11.01	11.01	-1.39	-1.39	.42	.42
GENDER Male	139	12.22	12.40	-.19	-1.39E-03		
Female	125	12.62	12.41	.21	1.55E-03	.07	.00
R = .42							
R square = .18							

Table 2 reveals that pupils in the educational trip instructional group had higher adjusted post test environmental knowledge score ($\bar{x}$ = 13.97; adj dev. = 1.56) than their counterparts in service learning ($\bar{x}$ =12.42; adj. dev. = 0.01) and control ($\bar{x}$ =11.01;

adj. dev. = -1.39) respectively. This means that the educational trip was the most effective at improving pupils' environmental knowledge followed by service learning and control.

Further it is necessary to trace the sources of the significant effect obtained for treatment on environmental knowledge. Hence, the Schefépost hoc tests were carried out and findings are presented in Table 3.

Table 3: Scheffé Post hoc Tests of Environmental Knowledge by Treatment

TREATMENT	N	$\bar{x}$	Treatment		
			1. Service Learning Strategy	2. Educational Trips Strategy	3. Control
1. Service Learning	87	12.42		*	*
2. Educational Trips	83	13.97	*		*
3. Control	94	11.01	*	*	

* Pairs of groups significantly different at P< 0.05

From Table 3, there are significant differences ($p<0.05$) between pairs of groups service learning ($\bar{x}$ =12.42) and educational trips ($\bar{x}$ = 13.97) and control ($\bar{x}$ =11.01) as well as educational trips ($\bar{x}$ = 13.97) and control ($\bar{x}$ =11.01). This shows that each of the three possible pairs of groups is

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

significantly different from one another and three pairs contributed to the observed significant effect of treatment on pupils' environmental knowledge.

Ho2: There is no significant main effect of gender on pupils' environmental knowledge.

Table 1 shows that gender has no significant effect on pupils' environmental knowledge ($F_{(1,251)}$ =.00; p>0.05). This means that male and female pupils' environmental knowledge do not differ significantly. Hence, hypothesis 2 is not rejected.

The multiple classification analysis on Table 2 shows that females obtained slightly higher environmental knowledge ($\bar{x}$ =12.41; adj.dev.1.55E-03) than their male counterparts ($\bar{x}$ =12.40; adj. dev. =-1.39E-03).

DISCUSSION

The findings revealed the magnitude of environmental knowledge scores favoured the educational trip group followed by the service learning group and the control. The two experimental strategies are participatory in nature, which allowed learners to make connections between social issues and environmental problems.

The higher environmental knowledge score recorded in educational trip is probably because in educational trip, pupils were taken out of classrooms to places where they could gain first hand experiences and study in a real life setting. The result is in support of findings of Erinosho (2008) and Wellington (2007) who reported that educational trip enriched knowledge and enhanced cognitive retention.

The higher environmental knowledge scores of pupils obtained in experimental group I (service learning) over the control might be attributed to active pupils' engagement in teaching-learning process. In the study, teachers and pupils became co-investigators of local problems and issues; provide practical actions with pupils taking increasing responsibility identified for their own learning which involves solving problem identified. This lends credence to the submissions of Sobel (2004); Melaville, Berg and Blank (2006) that service learning is the process of using the local community and environment as a starting point to teach concepts in Language Arts, Mathematics, Social Studies and other subjects across the curriculum emphasizing hands-on, real-world learning experiences. Unlike in the control group, the pupils were passive listeners and the teachers were only reservoir of knowledge and dominated the lesson. This strategy encouraged learners to learn by rote and they were unable to master what they learnt. This can be explained on the basis of what Ajitoni (2005) referred to as minimal students' participation usually found in the traditional classroom where teachers' talks dominate classroom interaction.

Also, the results of the study showed that there was no significant effect of gender on pupil's environmental knowledge. Although, there were differences in the mean scores of male and female pupils in environmental knowledge in social studies, these differences were not significant. This implies that the treatment had about an equal effect on both male and female pupils in the study. This could be attributed to the fact that the treatment provided equal learning opportunities for both sexes. The findings of this study is in line with the findings of Nkire (2011); Oladapo (2011) and Abiona (2008) who found no significant effect of gender on learning outcomes.

CONCLUSION AND RECOMMENDATIONS

The study has established that educational trip and service learning instructional strategies are approaches to teaching and learning that start with the local. They addressed two critical gaps in the experience of many children now growing up in Nigeria: contact with the natural world and contact with the community. The two strategies offered ways to extend young people's attention beyond classroom to the world as it actually is, and to engage them in the process of devising solutions to the environmental problems they will confront as adult. Also, it was discovered that gender was not strong determinant of pupils' knowledge in environmental issues and problems in social studies.

In view of the findings of the study teachers should adopt service learning and educational trip in the teaching of environmental issues and concept in Social Studies for better learning outcomes instead of staying in the classroom to teach pupil at primary school level all the time. In addition, Government should organize a form of re-training programme in the effective use of service learning and educational trip instructional strategies for social studies teachers at primary school level. This will enable our educational system to produce citizenry that are well equipped with benefits of frugal use of environment for sustainable development.

REFERENCES

Abolade, A.O.(2001). Television and Community Resources. In I.O Abimbola Ed. *Fundamental Principle and Practice of Instruction.* Ilorin : Beldon Enterprises and Tunde Babs Printers.

Adelegan,A.O. (2008). *The History of Environmental Policy and Pollution of Water Sources in Nigeria (1960-2004): The way forward.* Retrieved 4th august, 2009 from http://www.naee.org/conference/2008.

Agunbiade .A.O. (2007). The Impact of Structural Adjustment Programme (SAP) on the Nigerian Environment. In Okali, D; Ologe, K.O. & Igbozurike, U.M. Eds P*erspectives in Environmental Management*. Ibadan: NEST.

Ajitoni, S.O.(2005). Effects of Full and quasi-participatory learning, strategies on Senior Secondary Students' Kwara State, Nigeria. Unpublished PhD. Thesis. Department of Teacher Education, University of Ibadan, Ibadan.

Billig, S. H. (2000). Research on K–12 School-based Service-learning: The evidence builds. *Phi Delta Kappan, (81)*9, 658–664.

Billig, S., Root, S.' & Jesse, D. (2005). The Impact of Participation in Service-learning on high School Students' civic engagement. Denver CO: RMC Research Corporation.

Erinosho, S.Y. (2008). Teaching Science in Secondary Schools: a Methodology Handbook, Lagos African Cultural Institute.

Gbadamosi, T.V. (2005). Gender and Course of study as determinants of knowledge and Attitudes to some environmental issues among Colleges of education Students in Oyo township, Oyo State. *Forum Academia,* A muiltidisciplinary Journal of education, volume 4, No 1, 54-62.

Hecht, D. (2002). *The missing link: Exploring the context of learning in service-learning.* Presentation at 2nd International Service-Learning Research Conference, Nashville, TN.

Melaville, A.,Berg, A., & Blank, M.(2006). *Community-based learning: Engaging students for success and citizenships,* Washington, DC: Coalition for Community Schools.

Mezieobi, K.A.; Fubara,V.R and Mezieobe, S.A.(2008). *Social Studies in Nigeria: Teaching methods, instructional materials and resources*. Owerri: Acadapeak publishers.

Nkire, F.O. (2011). Impact of Participatory Instructional Programme on non-formal adult learners' environmental knowledge, attitude and practices in Oyo State, Nigeria. Unpublished post-field Seminar paper presented at Teacher Education Department, University of Ibadan, Ibadan.

Oladapo, S.O. (2011). Effect of a Participatory Environmental Education Programme on market men and women's' Knowledge Attitude and Practices in solid waste management in Oyo State, Nigeria. Unpublished post-field Seminar paper presented at Teacher Education Department, University of Ibadan, Ibadan.

Sabella, O.A (2009). *Redefining Nigeria's National Security.* Retrieved from www.security.org on 24th may, 2010.

Sobel, D (2004). Place-Based education: Connecting classrooms and communities. Great Barrington, M.A: Orion Press.

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

Tilbury , D (2006). The Critical Learning years for Environmental Education. In R.A Wilson Ed. *Environmental Education at the Early Childhood level.* Washington, D.C

WCED (1987). Our common Future. Oxford University Press.

Wellington, J (2007). Formal and Informal Learning in science: The role of the Interactive science Centres in Science. *Physics Education*, 25 (5), 247-252.

World Bank (2002). *Development and the Environment*. Oxford: Oxford University Press.

World Bank (2006). *Development and the Environment: World Development Indicators.* Oxford: Oxford University Press.