

Facilitation and Implementation of Environmental Education in Primary Schools in Nairobi County, Kenya

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Abstract

This study investigated the factors that influenced facilitation and implementation of environmental education in primary schools in Nairobi County. The study targeted teachers and pupils in order to find out the extent to which they are involved in environmental conservation and protection. The research design was descriptive. Questionnaires with both open and close ended. The collected data was analyzed using the statistical package for social sciences and presented using tables and frequencies. The results indicated that methods used in teaching environmental education were lecture (41.7%) and discussion (26.7%). The environmental education was integrated in the primary school curriculum and was taught in Social studies and Science subjects. Pupils (81.7%) were aware of the need to conserve and protect the environment. A majority of schools organized environmental activities and tree planting is the most prominent activity in most schools (60%). of conserving the environment. However, these activities were limited due to lack of resources and absence of facilitation. Seventy eight percent of teachers (78.2%) had no training on how to handle the teaching of environmental education. Inadequate teaching resources cited by 86.7 percent of the respondents and lack of training were the major challenges to environmental education. We recommended to curriculum developers that methods used in teaching environmental education should be practical oriented which pupils can utilize later in life. Schools should be provided with resources by county governments to facilitate environmental education activities.

Keywords: Curriculum, Environmental conservation, Pupils, Teachers

1.0 Introduction

Environmental education is a new approach to environmental education that has been designed to reach all citizens of all ages to educate them on how they can manage the biophysical environment. It also deals with environmental problems and how to become effectively involved in working towards solutions to these problems. Muthoka *et al* (1998) defines environmental education as a process of learning the environment so as to work with it and not destroy it. This approach agrees with Stapp *et. al.*, (1969) who reported that the approach to environmental education should be the concern for biophysical education and the problems associated with man and also educate people about the environment.

After the Stockholm conference of 1972 and Tbilisi conference of 1977, member countries of the United Nations (UNESCO, 1980) adopted the aims, goals, objectives and guiding principles for worldwide environmental education. As a result of this conference Kenya introduced environmental education into the formal education system. A survey of the primary education curriculum revealed that environmental education is integrated in the other subjects in our primary school curriculum. These subjects include: Science and Social studies at primary school level. In the secondary school curriculum environmental education is also integrated in other subjects such as Agriculture, Biology, History, Geography and History and Civics among others. In teaching training colleges environmental education is integrated in the subjects of Science, Geography, History and Civics, Agriculture and Home Science (Kinyua, 2001). This subject of environmental education was introduced in the higher institution of learning (universities) in the 1990s prompted by the Green Belt Movement (Maathai, 1998).

Despite the effort educational institutions have made to integrate environmental education in their curriculum, the environment has continued to deteriorate and there seems to be no serious measures in place to conserve, protect and manage the environment (Otiende *et al*, 1991). A case in point is the Mau Forest conservation programme which is a very crucial project for the survival of our country. The importance of this conservation programme should be owned by all the citizens so that they can work together (NEMA, 2004). This study investigated the facilitation and implementation of environmental education in primary schools in Nairobi County, Kenya.

The specific objectives were:

1. To establish how school curriculum influenced implementation of environmental education in

- primary schools in Kenya.
2. To assess how environmental awareness in the school influenced implementation of environmental education in primary schools in Kenya.
 3. To find out how government facilitation influenced the implementation of environmental education in primary schools in Kenya.
 4. To assess the challenges facing the teaching environmental education in primary schools in Kenya.

2.0 Materials and Methods

2.1 Study Area

Nairobi County is the capital and the commercial city of Kenya. It is also the County with the highest population of about 4 million people during the day and about 3.2 million at night (KNBS, 2009). It is bordered by Kiambu County to the North, Machakos County to the east and South East and Kajiado to the South and Southwest. Nairobi lies between latitudes 1° 17' and 0° 32' North and longitudes 36° 49' East (GoK, 2013). Its altitude is 1795 metres above the sea level. The area receives mean annual rainfall ranging from 600mm to 1500mm and has a temperature ranging from 14°C to 27°C.

2.2 Research design and Sampling Framework

The research design was descriptive as reported by Kothari (2004). Data collection for the research was carried out by use of a questionnaire. The target population consisted of 30 primary schools which the researcher used in order to generalize information. The target population consisted of primary school pupils, teachers and head teachers in Nairobi County. The questionnaire was pre-tested to respondents at Marion Primary School before giving them to the sample population.

2.3 Data collection

The gathering of the primary data sources applied mainly quantitative methods derived from the administered questionnaire that had four sections corresponding to the specific objectives of the study. Four enumerators supervised by Researcher interviewed the respondents over an eight day period.

2.4 Data Analysis

Data was analyzed using the Statistical Package for Social Sciences (SPSS Ver. 20). SPSS has the capacity to analyze data in a manner that is appropriate for presenting the results in different formats such as percentages, tables and pie charts for ease of interpretation.

3.0 Results

3.1 The School Curriculum

The study revealed that environmental education is integrated in other subjects in the school curriculum. Social Studies and Science are the main subjects in which environmental education is integrated. Eight methods were used in the teaching of environmental education in primary schools. These methods include lecture, discussions, demonstration field trips, practical work, use of guest speakers and use of pictures/tapes/newspapers as indicated in Table 1.

Table 1: Methods used in teaching environmental education in primary schools

Method	Frequency	Percent
Lecture	25	41.7
Discussion	16	26.7
Demonstration	4	6.7
Field trips	3	5.0
Practical work	4	6.7
Guest speakers	1	1.7
Use of pictures/tapes/ Newspaper cutting	1	1.7
Total	54	100

Sources: Authors, 2013

Of the eight methods used in teaching environmental education, it was established that lecture and discussion methods were the most commonly used. Training on how teaching of environmental education should be carried out was found to be wanting. It was revealed that over a half of the teachers (78.2%) had not had any training on how to handle the teaching of environmental education.

The findings make it clear that environmental education in service training for teachers is inadequate.

This is evidenced by the findings shown in Table 2.

Table 2 In-service training for environmental education teachers in Primary Schools

Period	Frequency	Percent
Below 5 years	7	11.7
6-10 years	2	3.3
11-15 years	1	1.7
Over 15 years	3	5.0
None	47	78.2
Total	60	100

Sources: Authors, 2013

3.2 Environmental Awareness

The study further examined the level of awareness of the pupils on environmental issues as in Table 3. This was done based on the need for environmental conservation and the pupils' knowledge of personalities, agencies and key issues related to conservation efforts. Eighty one percent of respondents indicated that it was necessary to conserve the environment and were aware of the conservation efforts being made by the government.

Table 3: Pupils' rating on the significance of Mau forest programme to Kenya

Item	Frequency	Percent
Water catch	49	81.7
Wildlife conservation	12	20.0
Beauty of nature	7	11.7
Prevent desertification	1	1.7
Prevent soil erosion	5	8.3
Medicinal plants reservoir	1	1.7

Sources: Authors, 2013

3.3 Environmental Activities

Primary schools carried out activities and inside the school that contribute to conservation of environment. A number of these activities were carried during the World Environmental Day (WED). The respondents indicated that the activities include tree planting, community cleaning, cleaning of their school compound and school exchange programmes as shown in Table 4.

Table 4: Activities Undertaken by Schools during the World Environmental Day

Activity	Frequency	Percent
Tree Planting	36	60
Community Cleaning	13	21.7
Cleaning School compound	21	35
School exchange programs (e.g. entertainment on environment)	13	21.7

Sources: Authors, 2013

Most primary schools had activities during the world environmental day (WED). Tree planting is the most prominent activity in most schools (60%). These activities are crucial as they impart on the pupils the message that knowledge, skills and competencies are equally useful and can be utilized later in life. The teachers made suggestions on how environmental conservation activities would be improved. They first commented on whether schools were doing enough on improvement, conservation and protection of the environment.

A total of 53.3% of the teachers indicated that schools are not doing enough to improve awareness, conservation and protection of the environment. There is more that schools could do in order to improve pupils' environment awareness in conserving the environment and further boost conservation efforts.

Some of the suggested ways are as shown in Table 5.

Table 5: Suggested Activities Schools to Improve Awareness of the Environment

Activity	Frequency	Percent
More involvement in environment work by pupils	33	55.0
Environmental clubs	10	16.7
Increase number of field trips	9	15.0
Sensitize community on Environmental issues	6	10.0
Total	58	96.7

Sources: Authors, 2013

3.4 Challenges Experienced in Teaching Environmental Education

A number of challenges are encountered by schools in their attempt to implement environmental education as tabulated in Table 6. Lack of resources was found to be the major challenge. Majority of schools did not provide resources necessary for environmental conservation activities. It is not possible to implement any program without resources. The other challenge that schools experienced was environment related. For instance schools that were overcrowded (high population) found it very difficult to maintain cleanliness of the classrooms and the school compound. Schools that were located in slums suffered the challenge to scattered solid waste (flying toilets), destruction of plant trees by animals, noise and air pollution. The other challenge has to do with actual teaching of the subject and these include limited time for teaching EE, inadequate EE content syllabus and heavy teaching load actually affect the teaching of EE.

Table 6: Challenges Experienced in Teaching Environmental Education

Problem	Frequency	Percent
Inadequate teaching resources	52	86.7
Limited time	33	55
Inadequate EE content in the Syllabus	13	21.7
Heavy workload	2	3.3

Sources: Authors, 2013

4.0 Discussion

The school curriculum plays a major role in the implementation of EE in primary school as it exposes pupils to environmental issues and how they can explore mechanisms of solving these issues. Eight different methods were identified for use in teaching of EE in primary schools. Of these methods lecture and discussion were the most frequently used by teachers in their approach to teaching of EE. These methods are known to be ineffective in teaching of EE because they are theoretical and do not offer opportunities to pupils for a hands on experience to be able to engage in environmental protection (Mandila, 2008). According to Kinyua (2001) it was reported that teachers did not have a clear understanding of the concept of integration in relation to the teaching of integrated environmental education in the various disciplines.

Training in environmental education was found to be wanting. 78.2% of the sampled teachers who handle the Social Studies and Science subjects in which EE is integrated had not received any form of training on the approach of teaching EE. Education institutions like primary schools lay foundations where values are built, if knowledge and skills on the environment are inculcated at this level they become part and parcel of an individual. When pupils are exposed to issues in their community facing their society early in life, they are in a position to appreciate the issues and be they are able search solutions to these problems. This can be achieved through sensitization and exposure of teachers to workshop, seminars and short courses.

Awareness creation is a strategic approach to tackling the environmental problems in Kenya. Pupils in school, teachers and the general public should be sensitized on the environmental challenges facing our society today and how each of us has contributed to these challenges. We keep blaming the public but have we exposed them on the roles they play as contributors to the problem.

Schools have organized groups which provide an appropriate forum through which environmental awareness can be shared in theory and practice. Environmental laws should be enforced and NEMA undertakes its mandate with support from all government and public organizations. Environmental activities contribute a great deal to the implementation of Environmental Education. Special days such as World Environmental day should be recognized and activities at National and local levels to mark such important days in our calendar year. With only 1% tree cover the government should set aside a National Tree planting day with elaborate programmes to educate people in formal and informal institutions on the significance of the environment and

how we can all be involved in coming up with solutions to manage our environmental problems. Essay competitions on the environmental issues should be started in schools to promote awareness. The best candidates should be rewarded and offered opportunities to promote awareness and the suggestions they come up could be implemented

5.0 Conclusion and Recommendation

School curriculum, awareness creation and environmental activities were the primary tools of environmental education implementation in primary schools. Schools also faced a number of challenges which impede their efforts to implement environmental education. These included the curriculum, inadequate teaching resources, limited allocated time to handle environmental education issues, inadequate environmental education content in the syllabus, heavy teaching load, bare ground/dust, scattered solid waste, blocked drainage and pollution. Schools found in slum areas such as Kahawa and Drive In primary Schools have the problem of scattered solid waste (faeces) commonly referred to as 'flying toilets'. Effort by schools to plant trees is hammered by goats and sheep that come into the compound and destroy the plants. We recommend that methods used in teaching environmental education should be practical oriented which pupils can utilize later in life. Schools should be provided with resources by county governments to facilitate environmental education activities. Findings are useful to policy makers, curriculum developers and the Kenyan government on how environmental education was being implemented.

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Author Declaration

Authors 1, 2 and 3 designed the data collection instructions. Authors 1 and 3 pretested and refined the data collection instruments. Author 1 gathered the data, analyzed, wrote draft with output guidance from author 3. Author 2 provided guidance, corrections and supervision to the entire research. All authors read and approved the final manuscript.

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