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**SECONDARY SCHOOL STUDENTS' PERSPECTIVES OF ENVIRONMENTAL
QUALITY IN KENYA: A CASE STUDY OF BUNGOMA DISTRICT**

By

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A THESIS

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ABSTRACT

Concern had been raised to the effect that Secondary School students in Kenya lacked conservation principles in their day-to-day lives. In light of this, it was the purpose of this study to understand the meanings the Secondary school students attributed to the quality of their local environments. To do this a phenomenological theoretical framework was employed. This had not been used in the earlier studies identified in the literature. This allowed the use of qualitative research methods that enabled the students to reveal their innermost dispositions with regard to their perceptions and extent to which they participated in fostering environmental quality.

The study was significant because it contributed to a deeper understanding of the students' social actions and behaviours in their local environments. It also attempted to gain a phenomenological understanding of the person - environment relationship. Moreover, it evolved a model for evaluating environmental education programs.

The review of literature showed that research on students' perspectives of environmental quality and the extent to which they participated in its conservation was rare. This was attributed to the use of research approaches that were not interpretive in nature. In light of this, the study employed a phenomenological paradigm to invoke students' perspectives of environmental quality.

The study was carried out in two phases. In the pilot study which lasted for eight months, a purposive sample of 60 students at Busakala Secondary School in Bungoma District participated as key informants. Through in-depth interviews, document analysis and observations, the students' perspectives of the quality of their local environments were depicted. The data were thematically analysed. The themes that emerged were incorporated in the questionnaire, which was used to validate the data in the main study. The questionnaire was administered to a purposive sample of 272 students in the main study. Achievement tests in environmental education were also administered to the students. The students were selected from 22 secondary schools in Bungoma District. The schools were randomly selected from a total of 111 schools.

The data were analysed qualitatively to determine students' environmental perspectives. The results of the study showed that most students who participated in the study had not developed requisite environmental knowledge, which would enable them, participate in positive environmental action. Due to lack of requisite knowledge the students' perception of the various attributes of environmental quality was inadequate.

The results showed that most students only recognized the interacting factors of the simpler environmental processes that effected the quality of their local environments but not the more complex ones. Although they also identified the attributes of a quality environment the students still held misconceptions about the various attributes of environmental quality. For example they were unable to discern visual pollution, aesthetics, and biodiversity conservation in their local environments.

The study further indicated that most students did not adequately participate in protecting and improving the quality of their environment. The limited participation was attributed to the fact that the students did not possess dynamic qualities and adequate environmental knowledge and awareness. This was attributed to students' own beliefs, cultural values, and the failure of the schools to expose them to a fruitful environmental education program.

It was concluded that the students' limited environmental action was not due to indifference or apathy. Rather it was due to the lack of dynamic qualities buttressed by the students' own beliefs, cultural values, ethos of the schools, instructional methods, and the nature of external examinations all of which did not encourage acquisition of the necessary practical skills and values. These factors affected their overall perspectives of environmental quality, which were chiefly anthropocentric in nature.

Several essential recommendations are made for the reorganization of environmental education in secondary schools in order to make it more effective. These include immediate reassessment by policy makers of environmental education content with a view to harmonising it in the school curriculum and establishment of a Department of Environmental Education in the Ministry of Education to co-ordinate its implementation. There is also need for curriculum developers and evaluators to develop a framework for the teaching and evaluation of environmental education in schools. It is

also recommended that schools should adopt a “whole school approach” to the teaching and learning of environmental education as one essential way of informing their ethos. In addition, it is recommended that teachers should approach environmental issues practically.

Further research should be done regarding the contribution of environmental awareness and attitudes in environmental action. There is also need to find the relationship between environmental action and other variables such as gender, ecological zones, sex composition of the school and subject areas of study. Besides, it is recommended that further research be done regarding the various pedagogical strategies, which fostered the development of dynamic qualities in students and the development of instruments to measure these qualities.

CHAPTER 1

INTRODUCTION

1.1 Background to the Problem

Development manifests itself in the satisfaction of human needs, which enable people to live happily. Although the exploitation of natural resources by using various forms and levels of technology leads to development, it also results in environmental degradation.

Mankind started exploiting the earth's resources for development purposes since the beginning of man. But much of the environmental degradation we see today is the result of increased human consumption of natural resources for development activities which began during the industrial revolution when capitalism was introduced in world economy. Since that time up to now man's relationship with the planet earth has been guided by the "anthropocentric paradigm": that nature is separate from man and that it subordinates the needs and wants of humans. Hence resources have since been exploited indiscriminately as if this has no long-term effect on man himself.

As a result of man's unsustainable development activities, the planet earth is now in critical danger. The finite non-renewable resources are on the verge of exhaustion. The renewable resources are also being depleted faster than they can be replaced. For example, forests are fast disappearing at an alarming rate of 1½ acres per second leading to desertification at a rate of 60,000km² per year (Advadhuta, 1990:6). Similarly, the atmosphere is being polluted giving rise to increased greenhouse effect, global warming, ozone layer depletion and acid rain.

Increased consumption of goods has also led to the problem of solid waste

disposal. Piles of garbage in our residential backyards and city streets not only reveal our unkindness to the environment, but also are reminiscent of our careless lifestyles. Indeed as Baez (1987:9) points out, human beings have through the use of science and technology altered the earth's life support systems that all living things are now threatened with extinction. The environmental paradox is that as man's technological ability to control and modify environments is increased, the quality of these environments is sharply decreased.

Meaningful steps to correct and prevent any further environmental degradation (environmentalism) began at the United Nations Conference on the Human Environment held in Stockholm in 1972. At the conference, it was realized that man had greatly vandalized the earth's resources and that if he continued to do so, his own survival was at stake. The conference therefore recommended that the United Nations Environmental Program (UNEP) be established with its headquarters in Nairobi, Kenya to co-ordinate global environmental information gathering and dissemination. The conference also recommended that an International Environmental Education Program (IEEP) be established charged with the responsibility of developing a program in environmental education which would empower the world population to enhance environmental quality. A new consensus was thus forged and the foundations of the concept of sustainable development were laid (UNEP, 1988:5).

In 1975, the International Environmental Education Program (IEEP) was formally launched under the auspices of UNEP and the United Nations Educational, Scientific and Cultural Organization (UNESCO) at the International Workshop on Environmental Education held in Belgrade. At the ensuing Intergovernmental conference on Environmental Education held in Tbilisi, Georgia, in October 1977, the IEEP presented comprehensive goals, aims, objectives and guiding principles of environmental education

which were adopted. All countries of the world were urged to incorporate environmental education in their curricula at all levels of education using the adopted modalities. It was also recommended that environmental education be interdisciplinary in approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective (UNESCO, 1986:14). Environmental education was therefore symbolic of modern environmentalism or the “biocentric paradigm” or the “new environmental paradigm” that had began and has continued to gain ground the world over.

Modern environmentalism embraces free-will philosophies like existentialism and phenomenology. These start with the premise that since there are no externally produced natural (or social) laws by which individuals must be bound, beyond the one certainty of death, we may choose how we live, and treat nature and each other (Pepper, 1987:72). This means that we bear the responsibility of our actions towards nature, be they exploitative or caring. The human heart and eye need to be educated therefore. The deterministic view of nature as being separate from and external to human consciousness is thus challenged.

The United Nations Conference on Environment and Development (The Earth Summit) held in Rio de Janeiro in 1992 made further action - oriented recommendations. Agenda 21, in particular chapter 25, indicates that school children are obliged, through environmental education, to participate actively in guarding the quality of the environment because they comprise half of the global population and are highly vulnerable to the effects of environmental degradation now and in the future (United Nations, 1994, Chapter 25). The fact that environmental education facilitates such participation and cultivates a concern for the environment in the students cannot be gainsaid.

For school children to participate in causing positive environmental change, they must reach out to participate in environmental conservation activities. To be able to do this, students should possess dynamic qualities gained through environmental education (Kelley-Laine, 1991). These essential and unique qualities are viewed as personal qualities of thought, feeling and action which develop in the students through a process of learning in which understanding and action are key features (Posch, 1991:3).

A student who develops dynamic qualities not only values those resources which are of economic value and can be measured quantitatively such as crop yield, volume of timber and weight of potatoes, but also places a qualitative value on the intangible resources such as the beauty of the landscape, among other things. The students' environmental actions in this case would include: caring for the beauty of the landscape by planting and nurturing trees, flowers, grass, hedgerows all of which provide shade, colour and contrast; and, maintaining cleanliness of buildings, flowerbeds, gardens, fences, car parks, open spaces and natural features such as hills and valleys for the purpose of promoting environmental quality. They would also demonstrate the ability to conserve important resources like energy, water and soil as well as controlling pollution. Environmental education is therefore a practical endeavour in which individual action and participation are crucial.

Whereas environmental education has been in Kenyan secondary schools since 1985, concern has been raised to the effect that students do not adequately participate in solving environmental problems. In 1991, for example, the Minister for Environment and Natural Resources, voiced his concern for the lack of conservation principles in the students' daily activities (Kenya Times, 19 August, 1991). If environmental education is being taught in schools as required, why are these concerns raised?

On the other hand, a perusal of past examination papers shows that students were

being tested for environmental knowledge in the various subjects in the curriculum (See appendix XI). However, we cannot discern students' participation in environmental conservation solely from these paper-and-pencil tests. According to Kelley-Laine (1991), environmental education fosters the development of dynamic qualities that may form people who recognize the importance of their environment and are therefore concerned with its survival. It is unlikely that students who did not possess such qualities would display a concern for the environment and adequately participate in protecting and improving its quality. It would not matter how much environmental concepts they had crammed in their heads.

The content analysis of the syllabi also shows that many of the environmental education objectives are practical in orientation. The purpose of this is to adequately involve the youth in an effort to alleviate the various national and local environmental problems. The students are ostensibly given opportunities to identify and solve environmental problems in their daily lives in an effort to enhance environmental quality.

Research on student participation in the conservation of environmental quality in Kenya and elsewhere is rare, however. The studies done so far by Bennet, (1974); Richmond and Morgan, (1977); Hague, (1987); Blum, (1987); Lee-Smith and Chaundry, (1990); and Tubianosa et al, (1995) have tended to concentrate on students' acquisition of environmental knowledge and on their attitudes towards selected environmental concerns. Moreover, research dealing with students' practical applications of environmental education has tended to focus on the products in the environment rather than on the process involved in arriving at such actions. The studies done by Buskov, (1991); Folkedal, (1991); Pieters, (1991); and Sutti, (1991) are valid examples. Most of these researchers employed the systems-analysis approach that focuses on measurement of variables that are easily quantified. Data produced in this way may not necessarily

provide an insight into students' participation in environmental action. Research designs which facilitate an understanding of students' perspectives with regard to their participation in enhancing environmental quality are needed. To understand such perspectives means to enter the students' world. Research strategies that elicit data that are chiefly phenomenological could discern the meanings students attributed to their participation in promoting environmental quality.

1.2 **Statement of the Problem**

The improvement of environmental quality is the ultimate and essential goal of environmental education (Vivian, 1973:14). More specifically this goal is "to create a concern for all environments - a concern that leads to a commitment to preserve or develop optimum environments and to improve less desirable ones" (Vivian, 1973:14). For Kenyan Secondary School students this onus should be apparent in those environments with which they have frequent contacts, namely, their local home and school environments.

This study explored in general the impact of environmental education on the environmental perspectives of secondary school students in Kenya. This involved exploring the way in which students' views, behaviour, and social actions as they relate to environmental protection and improvement fit into and are changed by the set up of the school and home environments. It attempted to depict the meanings or perspectives which students attributed to the quality of their local environments in relation to the extent they participated in protecting and improving such environments.

This study therefore focused on the impact of environmental education on the ability of secondary school students to understand environmental issues and to recognize and resolve environmental problems by either altering and /or creating components to

enhance the quality of their local environments.

1.3 **Purpose of the Study**

The purpose of this study was to understand the impact of environmental education on secondary school student's views, feelings, concerns, perceptions, and actions - or meanings – regarding environmental quality and their participation in its preservation and improvement.

The emphasis of the study was on two important changes promulgated by the process of environmental education: changes in the environment through informed actions and changes in the students as they participated in these actions.

The specific objectives of this study were to:

- (a) Determine what the students had learned about the quality of the environment.
- (b) Determine the students' perception of environmental quality.
- (c) Determine the extent to which the students practiced what they had learned to protect and improve the quality of the environment.
- (d) Find out whether learning in environmental education had developed dynamic qualities in the students to enable them protect and improve environmental quality.
- (e) Identify the weaknesses of, and the improvements needed in, the secondary school environmental education program from the students' point of view .

1.4 **Research Questions**

The study attempted to collect data to address the following research questions:

1. What environmental issues regarding environmental quality have the students learned?

2. What environmental knowledge do the students apply to new situations requiring the improvement of environmental quality?
3. What meanings do the students give to the various attributes of environmental quality in their local environments?
4. What have the students done, or continue to do, to protect and/or improve the quality of their local environments?
5. Under what circumstances do the students participate in protecting and/or improving the quality of their local environments?
6. What factors affect the students' participation in protecting and/or improving environmental quality?
7. Which dynamic qualities do the students either possess or do not possess, that affect their actions in their local environments?
8. What factors affect the development and/or functioning of the dynamic qualities in the students?
9. What do the students see as the weaknesses of the environmental education program in secondary schools?
10. What improvements in their environmental education program do the students suggest?

Each of the questions or group of questions stated above formed a theme upon which data would be organized.

1.5. Assumptions of the Study

The study was based on the assumptions that:

- (a) Students in secondary schools of Kenya are involved in practical learning and applications in environmental education.

- (b) Environmental education changes secondary school students' behaviour with regard to their participation in the conservation of environmental quality.
- (c) Students' environmental knowledge, skills and attitudes are expressed in environmental action at school and at home.

1.6 Significance of the Study

This study attempts to understand the impact of environmental education from the students' own perspectives. In doing so, it is hoped that the findings would be of value both to practice and to theory.

With regard to its practical value, the study attempts to contribute to a deeper understanding of the students' views, social actions, and behaviours in their environments. The information would be useful to: curriculum developers in making necessary modifications to environmental education curriculum; teachers of environmental education in terms of delivery; policy makers in giving the necessary financial backing; and social workers in planning, developing and evaluating informal environmental conservation programs.

On the theoretical side, this study would be useful in two ways. First, the study attempts to gain a phenomenological understanding of the person-environment relationship whose environmental awareness had been enhanced through environmental education. In this regard the study has attempted to evolve a model for evaluating environmental education programs from the students' own perspectives. Second, the study provides information on the identity and nature of dynamic qualities that facilitate environmental action. This study therefore has attempted to contribute to the knowledge of the processes of environmental action and participation in the emerging field of environmental education.

1.7 **Scope of the Study**

Due to limited fiscal resources it was not possible to carry out the study in as many schools as possible in the District. A representation was opted for instead. However, the findings can be implied for other students. This is because the basic learning conditions in schools throughout the country are similar.

The study explored how secondary school students regarded and related to the resources that are vital in sustaining environmental quality including those whose value is not easily quantified: land; water, air, biodiversity, the beauty of the landscape and the usefulness of a clean environment. It focused on the students' perspectives of these attributes in so far as they affected the quality of the environment. In particular, the students attempted to interpret their own behaviour, views and social actions in the school and in their homes with regard to these attributes. The study excluded depicting quantitative environmental indices of these attributes.

1.8 **Conceptual Framework for the Study**

The broad theoretical background of this study is provided by the concept of sustainable development. When this concept is applied to the school situation, the conceptual framework for this study becomes: the school and the home as interdependent precincts within the society whereby students attain a shared sense of meaning that enables them to variously carry out the day-to-day environmental conservation activities that lead to sustainable development. This holistic perspective embraces both the functionalist theory and the interpretive approaches, particularly phenomenology.

According to the functionalist theory, every society has a culture which determines the nature of the social structure (or roles and role expectation) and shapes the individual personalities. The function of the school is therefore to enable young people

to attain the shared values and norms (or culture) of the society so that they perform the adult roles that lead to the development of the society. Blackledge and Hunt (1985:66) also contend that young people are obliged to perform these roles because they need to do so for their own survival. This theory is mechanistic as it neglects the importance of the actors' definition of the situation. It regards "people as programmed puppets with no creativity or free will" (Blackledge and Hunt, 1985:316). The theory is, however, indispensable because it provides the framework that enables us to understand the attributes and processes of social action in order to explain a given phenomenon. The attributes in this study include society, school, home and the individual student while the phenomenon is environmental quality vis-à-vis sustainable development.

The phenomenological approach, on the other hand, makes up for what the functionalist theory ignores. The approach is based on the premise that it is people in interaction who make society and we must first understand how individuals think and feel. As it were phenomenologists do not assume they know what things mean to the people they are studying (Douglas, cited in Bogdan and Biklen, 1982:31). Rather, we need to interpret behaviour of individuals, understand the subjective meanings of their actions as well as locating individual conduct in its social context (Blackledge and Hunt, 1985:335). The methodological rule is always to ask the question of what is the nature or meaning of something. The bone of contention of this approach is that whereas the social system in which we operate shapes our ideas, beliefs and values as well as controlling our actions, we may as individuals or in groups modify society's institutions and expectations of us.

In the light of this conceptual framework the students are expected to enhance sustainable development at school and at home. They should contribute to the quality of human life and that of the environment through appropriate environmental action that

constitutes preservation, maintenance, sustainable utilization, restoration and enhancement of the natural environment.

To many economists the concept of “sustainable development” is primarily a restatement of the broad concept of “development”. This is evident in the definition of sustainable development given by the World Commission on Environment and Development: “Sustainable development is development that meets the needs of the present without comprising the ability of future generations to meet their own needs” (WCED, 1987:43). Because the term is viewed in this manner it is erroneously used to refer to “Sustainable growth” and “Sustainable use”. These terms contradict the essence of sustainable development. For example, “sustainable growth” is not possible, for nothing physical can grow indefinitely (IUCN/UNEP/WWF, 1991). If sustainable development is viewed in this way, then it is production-centred, focussing on credit and machinery, on exports and imports and on competition on world markets (Meadows, 1989:26). Success is measured in GNP – the output of final goods and services. Development of this type does not consider who benefits from the output, who pays the costs, what uncosted environmental resources may have been degraded, who participated in production, whether ultimate human purposes have really been served or how long the production stream can be sustained into the future. The ultimate end of this type of development is measured in terms of the following attributes: social, such as health, literacy, education; economic, such as capita income, wealth; and psychological, such as happiness, fulfillment, empathy and need for achievement. The role of students in type of development is highly insignificant.

On the other hand, sustainable development is used in this thesis to mean, “Improving the quality of human life while living within the carrying capacity of supporting eco-systems” (IUCN/UNEP/WWF, 1991). The purpose of sustainable

development is to improve the quality of human life and that of the environment that supports such life. This involves more than just using technology to improve production and a pious wish for a better life. Sustainable development then cannot be measured simply in terms of GNP and per capita income. Other elements include attainment of environmental literacy vis a vis general education; change of attitude and practices with regard to the environment; empowerment of the people to care for their environments; ecological sustainability; and full participation of individuals in these.

Thus sustainable development is not production - centred but people - centred. It assumes that the primary resource for development is the creative initiative of the people and that the primary purpose of development is to achieve a high quality of life in ways that are ecologically sustainable. The role of students in this type of development would be as significant as that of the adults. Literature on sustainable development however does not reveal a model that exhausts all the components of sustainable development.

The present study is limited to a selected matrix of social-cultural elements as they affect students' participation in the process of sustainable development. The rationale for students' participation in this process is discussed at length in chapter two.

Operationally sustainable development is here perceived in terms of one key variable: participation both at school and at home. The adoption of new ideas, beliefs and values and ways of behaviour constitutes the core of the sustainable development process. Participation in environmental action is one of the possible criteria that indicate that an individual has committed himself/herself to a change in lifestyle or perception from traditional to new and his /her integration in the sustainable development process.

Participation in environmental action is then used as a device for the organisation of data and as a key concept for an understanding of the present situation in the students'

local environments. This study does not try to falsify or confirm any general theory of education or social-cultural change, but attempts to locate sustainable development process within the “New Environmental Paradigm”.

The broad conceptual scheme outlined above is now focussed on the specific problem of the study. A number of concepts and/or variables and their relevant operational definitions are at first discussed separately and then their interrelationships.

Participation in Environmental Action is operationally defined as frequency of contact between an individual (or group of individuals) and the environment whereby meaningful change (maintenance, restoration, protection or improvement) occurs in the later. In this process there is application of environmental knowledge and skills consistent with the acquired values to individually or collectively act on he environment when appropriate. Only qualitative aspects (i.e. confirmation of action) perceived through interviewing, questionnaire and observation are considered rather than the quality and frequency of contact.

Participation in environmental action may occur at formal or informal levels:

1. Formal participation in environmental action is defined as frequency of contact with the school and community environments, while the student is at school. Again, only qualitative aspects (i.e. confirmation of participation/action) rather than quantitative variables such as extent or success or degree of participation (such as chapin’s social participation scale or efficiency in terms of success index) are considered.
2. Informal participation in environmental action is defined as frequency of contacts with the home environment while away from school. Again, quantitative aspects are excluded as in the preceding case.

Dynamic qualities: are personal qualities of feeling, thought and action (such as accepting

responsibility to improve the environment) which allow learners to cope with environmental problems.

Environmental quality: refers to the "condition of the whole environment as a pleasant, healthy medium that can sustain all forms of life" (Tivy and O'Hare, 1986:201).

Environmental Improvement (or Enhancement): is the application of appropriate knowledge and skills consistent with the acquired values to individually or collectively regenerate the degraded environment or upgrade the existing environment.

Participation: is the application of environmental knowledge and skills consistent with the acquired values to individually or collectively act on the environment when appropriate.

Perspective: refers to how students look at things in the environment - their perceptions, views, feelings, intentions, concerns and actions (Saveland, 1976:3).

Environmental Protection (or Preservation): is the application of environmental knowledge and skills consistent with the acquired values to guard the environment against degradation.

Local environment: refers to the built, the landscape and socio-cultural attributes, and all other experiences, in the students' immediate home or school environment, and their neighbourhoods that influence the quality of their lives.

Figure 1.1 represents briefly the essential components of the general model and their interrelationships. The model is designed to explain the nature of students' perspectives of environmental quality. It attempts to do this in terms of the combined influence on the students of variables such as the school, the home and the general social setting within the framework manifested by the general concept of sustainable development.

The perspective of environmental quality, as expressed in environmental action and

participation, is envisioned as a function of student dynamic qualities and the school setting. The school factors that promulgate the dynamic qualities in students include the pedagogical strategies used by teachers of environmental education. But the role of dynamic qualities is mediated by other student factors, particularly the observer characteristics that need to be addressed by any environmental education program if positive results are to be achieved. The observer characteristics arise from the interplay between home and society factors such as family goals, aspirations, values and life experiences and patterns and social values, beliefs and attitudes respectively. The role of the school through environmental education program is to either overcome or facilitate these influences and thus help the students develop the characteristic dynamic qualities that in turn influence their perspective of environmental quality. The arrows indicate the hypothesized direction of the flow of interactive casual influence in the holistic student-home-society-school framework manifested by the concept of sustainable development.

The model predicts that the school, the home, and the society factors are all important determinants of students' participation in environmental action and their perspectives of their environmental quality.