

# ASSESSMENT OF ENVIRONMENTAL EDUCATION TEACHING APPROACHES IN PRIMARY SCHOOL AND ITS APPLICABILITY IN CONSERVING THE ENVIRONMENT: A CASE OF LUSHOTO DISTRICT

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## ABSTRACT

Tanzania integrated environmental themes into the educational curriculum to foster a culture of sustainability and responsible environmental stewardship among the younger generation, which is vital for the country's long-term growth. This study investigates environmental education teaching approaches in primary school and their applicability in conserving the environment. The study involved (40) primary school teachers and 60 primary school students. Data were collected through focus group discussions and interviews. The results show that the teaching of environmental education in primary schools faces a number of challenges, which include a lack of specific recommended teaching materials, a shortage of books for subjects in which environmental content is integrated, limited extracurricular activities, a lack of a budget for field trips, and a poor culture of using professional guest speakers. Therefore, this study recommends that, in order to achieve the objective of equipping the younger generation with knowledge and skills for environmental conservation, teachers should teach the subjects that integrate environmental content in an attractive way, using attractive teaching and learning materials; students should participate in a variety of extracurricular activities; professional guest speakers should be used in teaching to share their experiences with students; schools should set aside space for environmental conservation activities; and there should be a specific budget for field trips

**Keywords:** Environmental education, Primary school and Applicability.

## INTRODUCTION

Environmental degradation, such as water pollution, ozone depletion, and land degradation, are global problems (UNEP 2012). Environmental issues affect human life, and hence it needs agent solutions for sustainable environmental conservation (Mwendwa, 2017).

The UN, after recognising the impact of environmental degradation during June 1972, held the First United Nations Conference on Human Environment in Stockholm, where all country members declared that environmental education should be used as one of the official strategies or programs to overcome the environmental problem because it will enable people to get knowledge about conserving the environment. (Wagner, 2011). Apart from that In January 1975, UNESCO increased efforts by establishing the United Nations Environmental Program (UNEP), which was later followed by the establishment of the international program in environmental education called IEEP.

Environmental education is very important for ensuring sustainable environmental conservation because it fosters awareness and understanding about environmental issues and promotes critical thinking, problem solving, and effective decision-making skills among individuals and groups. KACEE. (2010)

Educating children about the environment, its challenges, and strategies for preservation is essential because it enables children/students to be aware of the importance of the environment for human and other living organisms' lives, and it will enable them to become positive leaders for conserving the environment for future generations. (Kumar & Selvaraj, 2017).

Tanzania adopted the idea of involving students in efforts to conserve the environment by using EE as tools for environmental conservation since 1976, during the Arusha declaration, by introducing agricultural activities in schools. Kimaryo (2011).

## **LITERATURE REVIEW**

Environmental education is referred as the process of integrating environmental content into the education system in order to create awareness of people on environmental issues at all levels of education in order to ensure proper utilisation of natural resources. Erhaborand Don (2016)

The United Nations Conference on the Human Environment, held in Stockholm in 1972, recognised environmental education as a crucial instrument for environmental conservation, as it provides skills and knowledge that transform people's mindsets towards the environment. Kumar A. & Kumar A. (2004).

The Department of Education and Training of New South Wales (2001) believes that environmental education serves as a catalyst for behaviour change by increasing individuals' awareness and motivating them to take action against environmental deterioration.

Tanzania responded to the United Nations Conference's focus on using environmental education as a strategy for environmental conservation by integrating it into the school curriculum at all levels (primary and secondary) during the 1990s. (Kimaryo, 2011)

Tanzania began using EE as tools for environmental conservation and raising people's living standards in 1976, when the country adopted the self-reliance philosophy of education, which focused mainly on improving production through the use of available natural resources; hence, it was designed to change people's mindsets to work hard in order to increase manufacturing, contribute to society, and develop the national culture. To achieve this objective, the school was chosen as one of the places of production for farming and imparting artisan skills. Kimaryo (2011).

Tanzania integrated environmental education (EE) into the curriculum by incorporating it in different subjects. Students in primary school learn environmental issues via social studies, science, mathematics, vocational skills, personality and sports, information communication and technology, and in language (English and Kiswahili) (MoEC, 2005).

Despite Tanzania's efforts to incorporate environmental education into the curriculum, evidence shows that environmental issues such as water pollution, poor water management, and soil erosion continue to exist even in schools where students receive environmental education (Kimaryo, 2011).

Various studies have been conducted to assess the impact of environmental education on environmental conservation. Jambiya's (2003) study on environmental management in Lake Victoria showed a low level of awareness about environmental conservation among people,

despite their high levels of education. Also, Maitaita (2007) study revealed inadequate utilization of integrated environmental education in the school curriculum.

Regardless of the numerous studies conducted, there is still a lack of knowledge about the teaching approaches used to impart skills and knowledge to primary school students and the subsequent application of the skills by students in environmental conservation both within the school and the broader community. This is due to persistent environmental problems, such as soil erosion, poor waste management, and water pollution in the community.

This study aims to bridge the knowledge gap by addressing the following questions: What methods/approaches do primary school teachers employ to impart environmental education to students? How do students use the knowledge to protect the environment?

## **METHODOLOGY**

The study investigated the environmental education teaching approaches in primary school and their applicability in conserving the environment in the Lushoto district, Tanzania. The study employed a qualitative approach as its method. The approach was chosen because it allows the researcher to collect comprehensive and detailed information, and it helps the researcher to understand the process behind the results through observing feelings and expressions from the participants. The data were collected through a focus group discussion and interview methods.

Focus group discussion was chosen as a method of data collection because it facilitates the collection of more information related to selected objects through deep interaction between the data collector and participants; further, it allows the exchange of ideas and experiences (Creswell & Creswell, 2018).

The data were collected from four (4) primary schools in the Lushoto district, Tanga region, from 4th December, 2024, to 13th December, 2024. The primary schools were selected because the students learn environmental education in various subjects, and hence, they are suitable for data collection. A semi-structured interview was used to collect information from teachers and students in selected schools. The methods were selected because they provide clear instructions for interviewers to collect information from key informants who have experience related to the topic, and hence they enable them to obtain reliable and comparable data. The participants for this study were selected from four (4) primary schools in the Lushoto district; a total of 40 teachers and 60 students were used as the sample size for the study.

Data was analysed through a thematic approach because it allows researchers to investigate the depth and complexity of qualitative data. Themes were found, discussed, and illustrated using quotes from participants. The process of data collection started after getting a permit from the Lushoto district executive director.

## **RESULTS**

The results from the interview and focus group discussion concerning the assessment of environmental education teaching approaches in primary school and its applicability in conserving the environment in Lushoto District are organised into six themes, which include the style of teaching environmental education in primary school, teaching materials used to teach environmental education in primary, Extra-curricular activities conducted to enhance environmental conservation in primary school, reserved area for environmental Conservation

activities, Field trips conducted for further environmental learning in primary school and the use professional guest speakers to teach environmental education in primary school. Below is a description of the discussion.

### *The Style of Teaching Environmental Education in Primary School*

Environmental education in primary school is not tough as a separate subject; it is integrated into another subject. During the focus group with students, it was revealed that they get knowledge about the environment, such as the importance of the environment for our lives, through other subjects such as science. Students were quoted as:

We are getting skills and knowledge about environmental issues such as the importance of environmental conservation and the consequences of failing to conserve the environment through studying different subjects such as science, stadi za kazi and *maarifa ya jamii* (students, responses from the focus group in school A)

The quotation demonstrates that students' understanding of environmental issues heavily depends on teaching style and students' interest in a particular subject that environmental issues are integrated into. If students have little interest in a particular subject, it's likely they won't learn much about the environment.

During an interview with one teacher who teaches mathematics, it was revealed that the content of environmental studies in mathematics is not well specified to the extent that students are not getting specific knowledge of the environment but rather studying mathematics through using examples related to the environment. A teacher provided the following quote:

I am teaching mathematics in a standard seven class; the content of environmental is not explicitly stated in mathematics. Instead, some mathematics topics are presented with diagrams related to environmental issues. (Interview response from mathematics teacher in primary school D).

The quotation shows that although the syllabus shows that environmental education is integrated in different subjects to enable students to get the knowledge when they study the specified subject in the curriculum, it is clear that in some subjects, like the one indicated, students are not getting the environmental education intended.

### **The Teaching Materials Used to Teach Environmental Education in Primary School**

Teaching materials play a crucial role in facilitating learning for both facilitators and learners, as they aid in motivating students to develop an interest in specific subjects or topics, ultimately leading to the achievement of intended educational objectives. Teachers' interviews about the resources they use to teach environmental education revealed a lack of specific teaching materials (books); instead, they use the books listed in the curriculum for specific subjects that incorporate environmental education, although the books are not enough to the extent that students share them. A teacher provided the following quote:

There aren't enough books at our school for students to borrow and read on their own; more than five students share a single book. Teachers should write everything on a blackboard in such circumstances, and students should copy it. (Interview response from teacher in primary school B)

The focus group with students about teaching materials used to teach environmental education revealed that they are not given books for leading issues concerning teachers; they write on the blackboard, and they are required to copy them. Students were quoted as:

The teacher introduces the day's content, clarifies it while writing notes on the blackboard, and then asks us questions about the lessons we have learned. After we respond, the teacher clarifies our responses, marking the end of the lesson, and we are not provided with any books for reference. The responses are from the focus group in school B.

The availability of learning materials for private study is crucial for children's learning, as it helps them gain independence and the ability to learn without relying on teachers. The quotation from the interview with the primary teacher in school A and the students' responses from the focus group in school B illustrate that students rarely gain environmental knowledge from their classroom experiences, which limits their understanding of environmental issues.

#### *Extracurricular Activities Conducted to Enhance Environmental Conservation in Primary School*

Students' participation in extracurricular activities is crucial to learning since it develops the spirit of teamwork and leadership. Tanzania is among the countries that include extracurricular activities in schools. Teachers interviewed revealed that primary school students engage in extracurricular activities like sports and environmental cleanup, but there are no specific activities focusing on environmental conservation. One of the participants was quoted as:

Extracurricular activities are crucial for student interaction and talent stimulation. Our school offers extracurricular activities, such as sports, to enable students to acquire additional skills outside of class, but these activities are not focused on environmental conservation. (Interview response from teacher in School C).

During focus group conversations with students, it was discovered that students participate in extracurricular activities such as cleaning the classrooms and surrounding areas, which have no primary focus on environmental conservation measures. One of the participants was quoted as:

Our school provides us time to do extra activities after finishing the class hours; most of the time we are participating in sports, and some of the time we are signed to clean the environment. (Students' responses from the focus group discussion in school B)

The observation from a teacher and a student emphasises the significance of extracurricular activities for students in schools in order to encourage a spirit of teamwork and leadership, which will be beneficial in future environmental conservation initiatives although the extracurricular activities for students not emphasize much on application of environmental conservation skills

#### *Reserved Area for Environmental Conservation Activities in Primary School*

Engaging students in practical activities enables them to apply classroom knowledge to real-world circumstances and increase problem-solving abilities. The conversation with teachers regarding the reserving area for environmental conservation activities indicated that the school did not designate a place for practical training. The teacher was quoted as saying:

Practical work is crucial for students as it offers the opportunity to apply classroom knowledge in real-world contexts. Our school has approximately 2.5 hectares of land but does not have a designated area for environmental practical activities; teachers independently determine the locations to which they send students for extracurricular activities. (Interview with teacher in school D).

In the same area, students revealed that teachers are using the surrounding environment during teaching environmental education, although no specific area is reserved for practical training.

One student was quoted as:

If teachers taught us the importance of trees in creating oxygen gases in class, they took us outside the classroom and demonstrated various trees and their role in generating oxygen. (Students responses from focus group discussion in school D)

The quote from the teacher interview and student focus group discussion shows how important practical sessions are for students because they let them use theories and ideas in real-life situations, which helps them understand what they are learning in class, even though the school doesn't have a specific area set aside for practical learning.

#### *Field Trips Conducted for Further Environmental Learning in Primary School*

Experiential learning, such as field trips, is crucial for the learning process because it involves hands-on experiences that allow students to directly engage with environmental issues. Field trips to local ecosystems, such as forests or rivers, where they observed biodiversity, learnt about ecosystems, and witnessed environmental challenges firsthand. The findings from interviews with teachers revealed that students have limited chances to participate in field trips because of budget barriers. One of the participants was quoted as:

Field trips give students the chance to participate in experiential learning opportunities that are not possible in the classroom. The school arranges the field trip for students by asking the parents to bear the cost. Some parents, because of financial problems, fail to contribute, and this leads to some of the students not attending the trip; hence, they lack the practical knowledge intended (Interview with Teacher in School A).

In the same realm, the group discussion with students revealed that field trips are important in the learning process because they empower students to acquire knowledge and take action on environmental issues such as participating in community clean-up events and tree planting. Students were quoted as:

Field trips help us visit environmental areas and participate in environmental conservation activities, such as tree planting or recycling initiatives. The problem is that this trip costs a lot of money, which limits some students from participating. (Students responses from focus group discussion in school C).

The quotation from the teacher interview and students focus group discussion shows the importance of field trips to students because it increases understanding of ecological concepts and processes. The lack of school budget in conducting field trips restricts some students, who fail to contribute to the lack of opportunity to acquire the knowledge intended for them, as a result affecting the effort of conserving the environment.

#### *The Use of Professional Guest Speakers to Teach Environmental Education in Primary School*

The use of a professional guest speaker offers students the chance to gain insights from specialists in environmental fields. These specialists frequently provided firsthand expertise, research findings, and practical insights into environmental issues, enhancing students' comprehension of intricate ideas and contemporary environmental challenges. Interviews revealed that schools lacked a culture of inviting professional guests to address students about environmental issues. One of the participants explained as follows:

Despite not being an expert in the field of the environment, I teach the content using student books prepared by the Tanzania Institute of Education, and

occasionally I use online resources. I believe the use of professional guest speakers to teach environmental education in primary school is important because it helps to add knowledge to both teachers and students. (Interview with School Teacher, School B).

The group discussion with the students in the same area revealed that teachers are not using professional guest speakers to teach environmental education in primary school. One of the students explained as follows:

Teachers are teaching environmental education themselves; I have not observed any teacher who has invited a professional guest speaker to speak during their lessons. (Interview with student in School D).

The quotation highlights the importance of using an environmental professional guest speaker to promote active learning, student participation, and the development of critical thinking skills in the context of environmental education. This approach adds experiences and prepares students to tackle the complex environmental challenges of the 21st century. However, teachers are not adopting these approaches, which limits students' access to expertise.

## **DISCUSSION**

The study revealed the importance of environmental education to students in enabling their knowledge and skills to address environmental challenges, particularly in Tanzania, for current and future generations. The findings are in line with the study conducted by Mnyagani (2022), who found that environmental education helps students develop sensitive awareness of environmental issues such as climate change, pollution, biodiversity loss, and resource depletion. Furthermore, Sund and Wickman's (2008) study revealed that environmental education fosters critical thinking and the development of problem-solving skills in students.

Furthermore, the participants who participated in interviews and focus group discussions demonstrated that the understanding and applicability of environmental education in conserving the environment depend on number of factors as demonstrated hereunder:

Findings about environmental teaching styles showed that students' understanding of environmental education depends on the style used to teach the subject that includes environmental education topics. This means that students' understanding of environmental education depends on the style used, which has a big effect on getting them interested in a subject that deals with environmental issues. The findings align with a study conducted by Monde (2011) in Zambia on barriers to successful implementation of environmental education in Zambian high schools, which showed that successful delivery of environmental education takes place once its content is integrated into associated subjects.

Regarding the teaching materials used to teach environmental education, the findings revealed that no specific teaching materials are prepared for environmental content; instead, they use the teaching materials for specific subjects that incorporate environmental education. Furthermore, the findings indicate that the limited availability of teaching materials for specific subjects' limits students' ability to acquire comprehensive knowledge about environmental conservation. Didace, N., & Andala, H., O. (2021) conducted a study on the relationship between instructional materials and learning outcomes, revealing that effective use of these materials significantly enhances teaching and learning outcomes by increasing students' attention and motivation in a classroom setting.

Upon examining extracurricular activities designed to foster environmental conservation, it was found that students don't really do much in the main area of environmental conservation. Instead, they do things like cleaning the classrooms and areas around them that aren't really about environmental conservation. The findings are consistent with numerous studies examining the factors that determine students' academic improvement, indicating that extracurricular activities significantly influence academic achievement. For instance, Bakoban and Aljarallah's (2015) study on extracurricular activities and their impact on students' grade point average revealed a significant impact of these activities on academic performance, particularly among female students. Also, Ismuwardani et al.'s (2019) study on using a project-based learning model to improve students' creativity and self-reliance in their poetry writing skills showed that doing creative and problem-solving activities outside of school made them better at both.

The study regarding students' participation in field trips indicates that students have limited opportunities for experiential education due to budget limitations, which requires contributions from parents for these excursions. The situation limits students whose parents fail to contribute to attending the excursions and consequently a deficiency in the knowledge intended for them, which adversely impacts efforts towards environmental conservation. The results align with a study by Pirzado (2018), which demonstrated that experiential learning provides students with increased exposure to environmental issues.

## CONCLUSION

Generally, environmental education is crucial because students are equipped with the knowledge and skills to address the present environmental challenges. These strategies also empower them to take meaningful action to protect the planet and advocate for sustainable practices within their communities.

Furthermore, the effective comprehension of environmental education among primary school students relies on the appropriate teaching approaches employed, the quality of instructional materials, the quantity of extracurricular activities offered, the availability of spaces for environmental conservation projects, field trips, and the engagement of expert guest speakers.

## RECOMMENDATIONS

The study's findings recommend that, in order to achieve the objective of equipping the younger generation with knowledge and skills for environmental conservation, teachers should teach the subjects that integrate environmental content in an attractive way, using attractive teaching and learning materials. Additionally, students should participate in a variety of extracurricular activities, schools should set aside space for environmental conservation activities, there should be a specific budget for field trips, and professional guest speakers should share their experiences with students.

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## REFERENCES

- Bakoban, R. A., & Aljarallah, S. A. (2015). Extracurricular activities and their effect on the student's grade point average: Statistical study. *Educational Research and Reviews*, 10(20), 2737–2744. <https://doi.org/10.5897/ERR2015.2436>

- Didace, N., & Andala, H., O. (2021). The relationship between instructional materials usage in teaching and learning outcome in history subject within secondary schools in Rwanda. *Journal of Education*, 4(6), 82-101.  
<https://doi.org/10.53819/81018102t5017>.
- Erhabor, N.I., & Don, J.U. (2016). Impact of Environmental Education on the Knowledge and Attitude of Students towards the Environment. *International Journal of Environmental & Science Education*, 11(12), 5367-5375.
- Ismuwardani, Z., Nuryatin, A., & Doyin, M. (2019). Implementation of project-based learning model to increase creativity and self-reliance of students on poetry writing skills. *Journal of Primary Education*, 8(1), 51-58.  
<https://doi.org/10.15294/JPE.V8I1.25229>
- KACEE (2010) Kansas environmental Literacy Plan. Doi:  
<http://www.kacee.org/files/ELP%20forks%20Fi%20Nal.pdf>
- Kira, E. & Kafanabo, E. (2015). Secondary School Teachers' Knowledge Level of the Concepts of Environmental Education in Morogoro, Tanzania. Sokoine University of Agriculture.
- Kumar A. & Kumar A, (2004). Environmental Education. New Delhi, India. New age international (p) ltd, publishers.
- Ministry of Education and Vocational Training (MoEC). (2005). Muhtasari wa Jografia kwa Shule za Msingi. Dar-es-Salaam.
- Ministry of Education and Vocational Training (MoEC). (2005). Muhtasari wa Stadi za Kazi kwa Shule za Msingi. Dar-es-Salaam.
- Ministry of Education and Vocational Training (MoEC). (2005). Muhtasari wa Sayansi kwa Shule za Msingi. Dar-es-Salaam.
- Monde, P. N. (2011). Barriers to Successful Implementation of Environmental Education in Zambian High Schools: The University of Zambia, Lusaka.
- Mtaita, U. Y. (2007). Stakeholders' perception of their participation in environmental education in Tanzania. Unpublished thesis submitted in partial fulfillment of the requirements for the degree of Master of Education, Waikato University, New Zealand.
- Mwendwa, B. (2017). Learning for sustainable development: Integrating environmental education in the curriculum of ordinary secondary schools in Tanzania. *Journal of Sustainability Education*, 12, 2151-7452.
- New Southern Wales Department of Education and Training, (2001). Environmental Education Policy for Schools: Sydney's. Curriculum Support Directorate.
- Pirzado, A. P. (2018). *Analyzing the effectiveness of environment education projects in three Asian countries*. A conference paper presented to the ASIAN Climate Change Partnership Conference.
- Rajakumar, M. & Selvaraj, A (2017) environmental education; issues and challenges. Lulu publication. United states.
- UNEP. (2012). Institutional strengthening of education for sustainable consumption (ESC): Advancing ESC policy and implementation strategies, mapping opportunities. Dar es Salaam: National Environment Management Council (NEMC).
- Wagner. M, Fagot. M, Verré. J, Doler A, & Vogrin. M, (2011) Environmental Education: Contribution to a Sustainable Future. European Union. The SURF-Nature Project.