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Article

Integrating Environmental Education for Sustainability: Bridging Theory, Practice, and Political Engagement in Tanzanian Secondary Schools

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Abstract

This study employs a qualitative inquiry and a phenomenological case study design to critically examine environmental pedagogies within the context of Tanzanian secondary schools. The primary aim is to identify the contextual needs for reorienting education towards environmental justice through the lens of ecopedagogy. Specifically, the research explores three key aspects: stakeholders' perceptions of the human-environment relationship, the integration of environmental education into school curricula, and stakeholders' recommendations for enhancing environmental education in secondary schools. Guided by the Ecopedagogical Pyramid Framework, the study informs both data collection and the interpretation of findings. The study highlights the importance of environmental education in Tanzania, highlighting the need for a multidisciplinary approach to teach students about environmental issues. It calls for a balance between theory and practice, focusing on practical, action-oriented approaches. The Ecopedagogical

Pyramid Framework, which advocates for a balance between theory and practice, can help foster environmental competencies in secondary school students. The study also emphasizes the role of media in shaping environmental consciousness but also calls for more government resources and teacher training to ensure effective environmental education.

Keywords: Ecopedagogy, Environmental Education, Environmental Justice, Sustainability

Introduction

Ecopedagogy, as Freirean pedagogy, teaches to understand better the connections, including the politics, between social and environmental violence with the understanding that societal peace cannot be achieved with unsustainable environmental violence within the planetary sphere (Iftekhar & Misiaszek, 2020; Misiaszek, 2015, 2018) . As educators, we are not immune to the punishment for the injurious consequences of the devastating destruction of the earth. Therefore, we have professional and moral responsibilities to ensure the planet's sustainability. Darder's poem, *The Great Mother Wails* (Darder, 2010), provided amicable inspiration to us as we were developing this article. Verses 1 and 2 are worth reciting here as the author reiterates human devastating destruction of our planetary earth:

> The Earth extends her arms to us;
> revealing through her nature the
> changing condition of our existence.
> She bends and twists,
> deflecting the swords of
> our foolishness;
> our arrogance;
> our gluttony;
> our deceit.

Moreover, in the last but one verse, Darder poses two critical questions; "*When will we remove blindfolds from our eyes? When will we stretch our arms—to her [the earth]?"* More importantly, the first line of the last verse eloquently reminds us to restore our relationship with the earth when he argues: *Oh! That we might together renew our communion with the earth* (Darder, 2010). It was from this poem that we decided to stretch our arms by problematizing environmental pedagogies in Tanzania to determine the contextual needs of re-orienting education towards environmental justice through ecopedagogy.

The article begins with providing a contextual background of the environmental pedagogies in Tanzania which is followed by the introduction of the Ecopedagogical Pyramid Framework (Iftekhar, 2018), the framework that guided both data collection and discussion of the findings. The third section covers methodological considerations then followed by a discussion of the emergent themes from data. The last section presents the conclusions and study implications for the education system and environmental sustainability in Tanzania.

Environmental Education in Tanzania

Environmental education (EE) has become a global concern where every nation is required either by law or by agreement to sustain the environmental resources for the benefit of current and future generations. This understanding of EE calls for education institutions to provide rich and holistic EE for sustainable development. The teaching and learning of EE in Tanzania is very important due to the increased environmental problems emanating from a range of influencing factors such as population growth and poverty. It is also noted that pressure on natural resources is so intense, especially given the rapid economic growth that has also characterized the country in this century. It is advised that EE be made available to the youth and the general public because Tanzania's economy is heavily reliant on its environment and natural resources, and as such, they must understand how to maintain it for the benefit of both the current and future generations (United Republic of Tanzania, 2015).

Tanzania has integrated Environmental Education (EE) into its school curriculum since the 1990s, in response to global environmental concerns. The country's education and training policies emphasize the rational use, management, and conservation of the environment. In 1997, the Tanzanian government integrated EE into the curriculum to raise environmental awareness and responsibility for present and future generations (United Republic of Tanzania, 1995; 2014; 2023).

Both the potential and the constraints of environmental education (EE) in Tanzanian secondary schools are highlighted in the examined studies. The incorporation of EE in school curricula is examined by Kyando (2008) and Minja (2022), who point out that while EE is frequently incorporated into topics like biology and geography, it lacks a comprehensive, multidisciplinary approach. According to these studies, students' capacity to relate environmental issues to larger socioeconomic and political settings is hampered by fragmented delivery. Inadequate teacher preparation, a lack of funding, and a lack of institutional support are some of the obstacles to EE implementation even with policy support (Mnyagani, 2022). According to research, EE is primarily supplied through an integrated strategy; nevertheless, logistical and structural problems limit this method's efficacy (Mwendwa, 2017).

Although environmental themes appear in a variety of issues, a historical assessment revealed that their breadth and practicality are still uneven (Ndeskoi, 2018). Furthermore, research on the Uluguru Mountains shows that socioeconomic and cultural factors influenced community participation in environmental projects, demonstrating the critical role that community engagement plays in the effectiveness of EE (Manase, 2016). Cyprian (2022) and Mwendwa (2017) investigated EE awareness and implementation, finding that although students and instructors acknowledged its significance, actual implementation is still lacking. Inadequate teacher preparation, a crowded curriculum, and a lack of resources are major

obstacles. While Cyprian (2022) emphasizes the necessity of participatory and action-based learning to increase student participation, Mwendwa (2017) contends that a sustainability-oriented curriculum is required to promote environmental consciousness.

Focusing on the viewpoints of educators, Minja (2022) and Mnyagani (2022) reveal that teachers encounter obstacles such inadequate training, a lack of pedagogical assistance, and little government funding. According to Minja (2022), interdisciplinary teaching approaches could improve students' comprehension of environmental challenges and their significance in sustainability, underscoring the social sciences' contribution to EE.

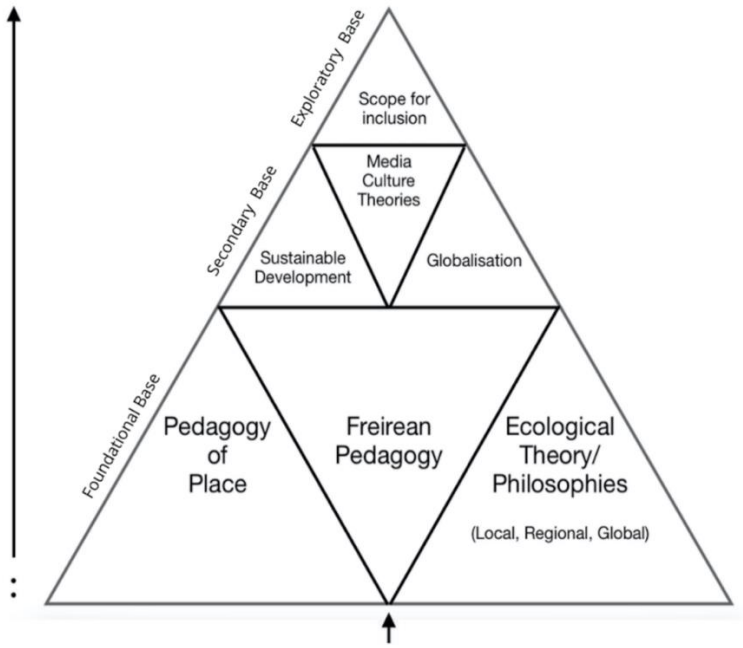
A recurring element in these studies is the discrepancy between practice and policy. Although EE is acknowledged as crucial in Tanzania's educational programs, its practical use varies. To close this gap, some academics support more government financing, better teacher preparation, and experiential learning strategies including field trips and school-community partnerships (Cyprian, 2022; Mnyagani, 2022; Mwendwa, 2017).

Although the teaching of EE has been emphasized in the Tanzanian education and training policy and curricula since the 1990s (United Republic of Tanzania, 1995; 2014), the prevailing view of school teachers concerning EE revealed in the literature is that it involves education about the environment which mainly focuses on teaching knowledge of environmental issues and limited skills (Kimaryo, 2011). It is argued by (Schreuder, 1991) that, the success of any EE experience depends entirely on the extent to which cognitive, affective and skills objectives are achieved by the learner. In that regard, for the teaching of EE *on, about, in,* and *for* the environment to take place in a learning context, the use of critical pedagogies in teaching and learning of environmental issues in formal education is of paramount importance so that learners can reflect and link what they learn in schools and the environmental reality in their societies for them to become change agents. Ecopedagogy has been accredited as an education approach to enhance the teaching and learning of connections between environmental and social problems (Misiaszek, 2015). It is in light of the argument that this research is conducted to uncover the scope of current environmental pedagogies in the Tanzanian context by looking into the existing and potential 'ecopedagogical' practices. We subject the theoretical and empirical ecopedagogical practices to the *Ecopedagogical Pyramid Framework* (Iftekhar, 2018) to find windows of opportunity to re-orient the Tanzanian education system towards environmental justice to sustain our planetary earth.

Theoretical Framework: Ecopedagogical Pyramid Framework

The Ecopedagogical Pyramid Framework (Iftekhar, 2018) is a research tool used in secondary schools in Dar Es Salam, Tanzania to identify deficiencies and opportunities in current environmental pedagogies. The framework's foundational elements include critical pedagogy of place, Freirean pedagogy, and contextualized ecological philosophies (from local/region to global). These elements are employed as multiple lenses in this study to uncover the scope of current environmental pedagogies in the Tanzanian context. The findings of this study are grounded in the voices of eco-pedagogues in Dar Es Salam, Tanzania, and intersect with Iftekhar's (2018) secondary base of the Ecopedagogical Pyramid Framework, which focuses on issues of sustainable development, media culture theories, and globalization in relation to multiple critical theories emerging from the Tanzanian context.

Figure 1. Ecopedagogical Pyramid Framework



Source: Iftehkar, 2018

The framework (Figure 1) is participatory and exploratory, divided into three bases: a) Foundational base, b) Secondary base, and c) Exploratory base. Freirean pedagogical aspects that have been included in the realm of this study include dialogue, conscientizacao, critical approach in teaching and learning, constant comparison and connection to the world, and praxis-orientation (Freire, 2010). These goals are represented by Freire's notion of conscientizacao, which is about becoming more fully human through transforming oppressive elements of reality. Critical pedagogical practices require educators to transform their teaching

practices from authoritative to interactive lessons by placing the learner at the center of the learning process.

The framework encourages all learning and teaching in the context of the reality of the learner. It investigates relevant socio-environmental issues in urban environments in the context of Dar es Salaam by establishing a connection with the pedagogy of place. This formal ecopedagogy framework challenges educators on the relationship between the kind of education they pursue to the places they inhabit and leave behind for future generations. This element of the 'future' aids the future utopian vision of Freire.

Place-based pedagogies are needed to ensure that the education of citizens has some direct impact on the well-being of the social and ecological places people inhabit. A person will be able to act as a responsible citizen if they have the knowledge, skills, and attitudes to think critically about issues and problems around them and make decisions to act. The pedagogy of place can be connected to experiential learning, contextual learning, problem-based learning, constructivism, outdoor education, indigenous education, environmental and ecological education, bioregional education, democratic education, multicultural education, community-based education, critical pedagogy itself, and other approaches concerned with context and the value of learning from and nurturing specific places, communities, or regions. When grounded in reality, the learning methods can be adapted to suit the particular settings that inhabit the educational unit, which in the case of this study were secondary schools.

Both critical pedagogy and place-based pedagogy blend to strengthen each respective tradition by borrowing from one another and complementing each other. The framework allows for theories to guide learning by using theories from a bottom-up, and local-to-global, approach. All pyramids in the foundational level of the eco-pedagogy pyramid complement each other and would be incomplete or show only one side if not looked at from different angles. For example, the use of ecological theories and local/region/global philosophies will serve the true purpose of this framework when coupled with Freirean critical pedagogy methods, which would aim to crack open any dogmas, canned philosophies, or propaganda.

The Ecopedagogical Pyramid Framework was chosen as it provides multiple lenses to guide the data collection. Using different lenses, the research was developed into the perception of environmental reality, understanding of environmental education, their involvement in environmental activities, EE pedagogies used in schools, globalization and the environment, as well as government mediation in environmental education. These topics were particularly useful in gathering different perspectives and experiences of EE in a secondary school context to determine what it takes to have a successful environment education in the

Tanzanian context particularly in secondary school. The framework for successful formal environment education allows this research to be grounded in the voices of the participants of this research.

Methods

The study adopted a qualitative form of inquiry using a phenomenological case design. It draws on theoretical and empirical materials collected in various ways in February 2023. We conducted in-depth interviews with two EE experts focusing on their biographies and experiences in environmental education. We also did focus group discussions (FDGs) with teachers and students from two secondary schools in Dar es Salaam Region. The participants were purposively selected because of their potential backgrounds and experiences in informing the research (Bryman, 2016). Besides, the types of research design and topic necessitated the researcher to decide on the participants who would be most likely to provide appropriate data, both in terms of relevance and depth (Jupp, 2006). Therefore, for teachers' FGDs, the groups comprised of one school environmental management teacher, two Geography teachers, two Civics/General studies teachers, and two Science teachers. For students, the groups were composed of student leaders, environmental club leaders and members, and student representatives. Table 1 presents the details of the study participants.

Table 1. Study Participants' Information and method of data collection

	Participant's Pseudonym	**Gender**	**Specialization/Role**	**Date conducted**
Interview	Expert 1	Female	Environmental Education Specialist	February 15, 2023
	Expert 2	Male	Local government environmental officer	February 12, 2023
Teachers FGD School 1	John	Male	Science Teacher	February 21, 2023
	James	Male	Civics/General Studies Teacher	
	Jackson	Male	Geography Teacher	
	Ester	Female	Civics/General Studies Teacher	
	Lunya	Female	Environmental Management Teacher	
	Ophra	Female	Geography Teacher	
	Gracie	Female	Science Teacher	
	Sam	Male	Science Teacher	

Teachers FGD School 2	Oscar	Male	Civics/General Studies Teacher	February 24, 2023
	Apsa	Female	Science and Geography Teacher	
	Jerry	Male	Geography and General Studies Teacher	
	Noe	Female	Environmental Management Teacher	
	Peter	Male	Geography Teacher	
Students FGD School 1	Mercury	Male	Student representative	February 21, 2023
	Venus	Female	Student Leader	
	Mars	Female	Student representative	
	Jupiter	Male	Environmental Club member	
	Milka	Female	Environmental Club Leader	
	Gado	Male	Environmental Club member	
Students FGD School 2	Mary	Female	Student Leader	February 24, 2023
	Patricia	Female	Environmental Club Leader	
	Michael	Male	Student representative	
	Bakari	Male	Environmental Club member	

Source: Fieldwork data, 2023

All interviews and FGDs were audio-recorded with the consent of participants to ensure accurate capture of their responses. The recordings generated approximately 60 pages of single-spaced transcripts, which were subsequently translated into English for consistency in analysis. Data collection and analysis were carried out concurrently in an iterative process, as recommended by Carlsen and Glenton (2011). This approach allowed the researchers to continuously refine their understanding of emerging themes and adjust subsequent data collection efforts based on preliminary findings. The iterative process continued until data saturation was achieved, meaning no new themes or insights were emerging from the data (Hesse-Biber, 2010). The study employed a thematic analysis approach to identify and interpret recurring patterns and themes within the data (McNabb, 2008; Wiersma & Jurs, 2004). This method of analysis involved several stages:

i. Data Categorization: The initial step involved organizing the data into manageable segments based on similar topics or ideas.
ii. Description: The categorized data were then described in detail to ensure a comprehensive understanding of participants' views and experiences.
iii. Synthesis: Finally, the data were synthesized into overarching patterns and themes that reflected the most significant insights from the study.

To facilitate this process, MAXQDA (2018 Version), a qualitative data analysis software, was used. The software supported efficient coding, categorization, and organization of data, ensuring a systematic and rigorous analysis process.

The reliability and validity of the study were ensured through multiple measures. The thematic analysis method grounded the findings firmly in the data, while the iterative process of data generation and analysis reinforced the consistency and credibility of the results. Careful translation of transcripts from Swahili to English preserved the original meaning and context of participants' responses, minimizing the risk of misinterpretation. Additionally, the use of MAXQDA software reduced the potential for human error during data coding and analysis, enhancing the accuracy and trustworthiness of the findings. By integrating rigorous data collection techniques with systematic and transparent analysis processes, the study produced results that were both comprehensive and reflective of participants' authentic experiences and perspectives.

Emergent Themes: The Key Findings

In the process of analysis, several themes emerged from phenomenological interviews and FGDs. The themes are: The symbiotic relationship between humans and the environment; The globality of the environment; The need for EE in secondary schools; The dominance of theoretical teaching in EE pedagogies; Media and the environment; and the state and the EE politics in secondary schools. Detailed presentation, analysis and discussion of the themes are provided below.

The Humans and the environment: The symbiotic relationship

This theme encompasses the participant's perception of the connection between humans and the environment. Participants were aware of the connection between the two; that human survival depends on the environment. A student in a FGD reiterated:

> For human beings to survive, they need basic needs such as air and food from the environment. All these come from living and non-living things which surround us (FGD, Students Secondary School 2).

Again, participants identified numerous environmental challenges facing the country such as unplanned settlement, overutilization of environmental resources and pollution which has resulted in diminishing quality (and quantity) of environmental components such as water, land, and air on which human survival is dependent.

> The environment which is mostly most affected is air and land. We do a lot of economic activities and industries release smoke which pollutes the environment. For the land, as I have said, to survive, we need shelters, and we need to cultivate crops, all these affect the land negatively. Water is also polluted but not to such a great extent as air and land (FGD, Students Secondary School 2).

Human development poses environmental threats, necessitating the use of science and technology to minimize environmental impacts. Understanding the connection between humans and the environment is crucial for developing environmental competencies among secondary school students (Hashim, 2016).

Freire's (2010) notion of *humanization* highlights humanity's ability to consciously and responsibly transform the world, acknowledging the symbiotic relationship between humans and the environment. He emphasizes that humans are deeply embedded in and shaped by their ecological and social contexts, rejecting the notion of separation from nature. Freire's critical pedagogy promotes a dialogical and participatory approach to education, encouraging individuals to reflect on their interactions with the environment. He draws parallels between the oppression of nature and marginalized communities, attributing environmental degradation to exploitative systems that prioritize domination over coexistence. Through conscientization—raising awareness of social and ecological injustices—Freire advocates for fostering ethical and sustainable relationships with the environment, underscoring the interdependence of human well-being and environmental health.

Generally, the relationship between humans and the environment is deeply intertwined and aligns closely with the principles and levels of the Ecopedagogical Pyramid Framework, which emphasizes critical awareness, ethical engagement, and transformative action. This framework provides a structured approach to understanding and fostering the symbiotic relationship between humans and their environment.

Globality of the environment

Participants admitted the globality -*consciousness of the world as a single space* (Robertson, 2000)- of the environment in the sense that environmental problems are not confined to local or regional space, but rather global problems. Environmental problems are global problems. It was urged by the participants that people should think globally and act locally.

> Therefore, if you plant trees in Iringa [a Region in the southern part of Tanzania], and people in Singida [a Region in the central part of Tanzania] don't do that enough, we can balance the state of the atmosphere. Do our students have that knowledge? Do our teachers have this knowledge? If you plant trees here, you give benefits to people miles away from here. This idea of connectedness and interrelatedness from local to global needs to be developed within our students and teachers (Teacher's FGD, Secondary School 1).

> Issues such as pollution, when Americans pollute the air by carbon dioxide emersion, it is not only America which is affected but the whole world. There is a need for stakeholders at the global level to meet frequently to discuss the state of environmental pollution. We have water pollution. People are polluting sea water and there are no boundaries between oceans. We only have hypothetical boundaries, not physical ones. When you pollute water elsewhere, we are all victims (Interview, Expert 2).

These perceptions from the participants are enlightening in the sense that, they help to understand social imagination and how people locate themselves and act in the world (Robertson & White, 2007). As the intensification of worldwide social relations which links distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa (Held, 1991), globalization is reported to help sensitize teachers and students on environmental issues. The media such as TV and the internet help to pass information from different parts of the world. With the advent of the information society, people

have access to information from all corners of the globe almost instantaneously, affecting the equation of time and space like never before. However, globalization results in the ability of core countries (in this case, the global north) to impose new practices that bring all countries into conforming to capitalist economic systems, without respecting local environmental concerns in the global south. This concern was noted during the interview as reiterated by the participant:

> I am not sure if in the global forums, the developed nations consider and respect our concerns. I see their arguments that global warming is not a big deal in Africa. I don't think they realize that we are equally affected by global warming. I know we have challenges of environmental degradation resulting from poor farming practices and deforestation, but they [developed countries] are the biggest polluters of the environment, especially from industrial production and we are the victims (Interview, Expert 2).

The above excerpt reveals a 'polarized' North-South debate on climate change issues. The negotiating positions between the North and the South are derived from inequality in the historical and current emissions of greenhouse gasses, the emerging consequences of climate change, and the geopolitical negotiating power between nation-states (Beer, 2014). While the Global North has tended to emphasize the common responsibilities of all nations to reduce emissions, nations of the Global South have tended to place more emphasis on differentiated responsibilities. In the context of EE, Wallerstein's works highlights how environmental degradation and resource depletion are not isolated local issues but are intricately linked to global capitalist systems, where the exploitation of resources in the periphery to benefit the core nations exacerbates environmental challenges worldwide (Wallerstein, 2011).

Paulo Freire's philosophy emphasizes the global interconnectedness of social, political, and ecological systems, highlighting that humans are intrinsically linked to their environment both locally and globally. He argued that environmental issues are deeply embedded in broader structures of oppression and exploitation, such as colonialism and capitalism, which transcend national boundaries (Freire, 2010). Through his concept of conscientization, Freire advocated for critical awareness of these global interconnections, encouraging collective action to address environmental degradation and social inequities. His focus on solidarity and shared responsibility underscores the need for a global ethic of care and respect for all life forms, positioning environmental sustainability as a global concern that demands cooperative and transformative action.

The globality of the environment aligns closely with the principles of the Ecopedagogical Pyramid Framework. This framework emphasizes critical awareness, ethical engagement, and transformative action, all of which are crucial for addressing global environmental challenges. The framework highlights the interconnectedness of local and global environmental systems, promoting a holistic approach to ecological issues. It encourages global citizenship, promoting responsible actions, and promoting collaboration across borders, promoting a shift from individualistic and localized perspectives.

Need for environmental education in secondary schools.

It is well understood that EE is needed to enable pupils to imagine alternative forms of development and to participate in actions following sustainability objectives (Conde & Sánchez, 2010). This requires pedagog(y)ies in which the pupils acquire the courage, commitment, and desire to participate in social undertakings relating to environmental issues as well as learning to be active citizens. This study reports the relatively inadequacy of the implementation of sustainable education through environmental education, which is consistent with the findings of Mwendwa (2017). EE has been integrated into secondary school curriculum mainly in geography and biology subjects. The findings reveal the need for multidisciplinary and integrated EE in schools for the sustainability of the environment.

> It is very important [to provide EE in secondary schools] because as we use environmental resources, we tend to deplete the environment. Therefore, if we strengthen teaching EE, it will have positive impacts on the environment. For instance, in the previous General Studies syllabus, environmental issues were a whole topic to be taught for a month. But with a new syllabus, it is a subtopic that can be taught for almost an hour. When they [curriculum developers] reduce the content, I don't know their objectives, or if they have a genuine interest in environmental sustainability. All in all, this generation needs to learn about the environment so that they contribute towards conservation (FGD, Teachers Secondary School 2).

> We need to understand that we have to use environmental resources without compromising the needs of the future. Other generations are coming, what are we leaving for them? We need to at least improve in our conservation and maybe with technological advancement they will do more to sustain the planetary earth. Generally, we need to sustainably use our environment for the next generations. This is a gift from God (FGD Students Secondary School 1).

Proper education, education that involves the mind and the body, reason and imagination, intellectual and instinctual needs (Kahn, 2010), has a cardinal role in addressing sustainability issues. EE is an essential part of the school curriculum. It helps students understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future (Iftekhar, 2018; Kimaro, 2018; Kimaryo, 2011; Mwendwa, 2017). Freire's emphasis on connecting education to socio-political and ecological realities suggests that secondary school curricula should integrate EE to cultivate a sense of responsibility, ethical behavior, and active participation in environmental sustainability efforts. By doing so, schools can prepare students to be proactive agents of change in their communities and beyond.

Hadjichambis and Reis (2020) emphasize the importance of environmental citizenship in education (EE) by promoting responsibility and active participation in environmental issues. They argue that education should empower learners to understand and address environmental challenges, and that effective EE involves teaching ethical behavior and active participation in environmental stewardship. By connecting students with real-world issues like climate change, pollution, and biodiversity conservation, they prepare them to become proactive agents of change.

Generally, the integration of EE in secondary schools directly supports the principles of the Ecopedagogical Pyramid Framework. By addressing awareness, critical reflection, ethical engagement, and empowerment, EE not only equips students with the tools to understand and address environmental issues but also fosters a lifelong commitment to sustainability and environmental stewardship.

EE pedagogies: The dominance of theoretical teaching

All participants were of the view that the current EE pedagogies in Tanzania are predominantly theoretical with limited practical components. Existing pedagogies are meant to prepare students for tests and contribute little to developing environmental and sustainability competencies such as creativity; critical thinking; systemic understanding; communication and collaborative skills; capacity for agency/action; and capacity to imagine and believe in future. For education to be liberatory, there should be an emphasis on praxis- reflection and action (Freire, 2010). The use of problem-posing as opposed to *banking education* pedagogies (Freire, 2010), is key to developing an environmentally conscious citizenry. In the study, participants opined that the existing pedagogies are not sufficient to develop an environmentally conscious being.

> EE is being taught for students to respond to examinations, but not something that prepares them to be responsible citizens who can take care of the environment, (FGD, Teachers Secondary School 1).
>
> We learn about the environment from the early grades, but it is still theoretical all along. We just learned to attempt examination questions, (FGD, Students Secondary School 1).
>
> For instance, a biology teacher may come to teach ecosystems. He/she can use chalk and board to teach without any practical/field visits. Even a Physics teacher in the environmental physics topic he/she just teaches theoretically. At least geography teachers do some practical sessions. …theory doesn't help us much. We just memorize for examinations (FGD Students Secondary School 2).

These findings correspond to Hashim's (2016) observation that teachers in Tanzania still employ traditional ways of developing knowledge in their students such as the 'talk and chalk'-method although they are supposed to insist on learning by doing such as visiting various places to learn more about environmental issues. In many regions, especially those with colonial histories, the 'chalk and talk'-approach became entrenched due to educational models imposed by colonial powers. These models often emphasized rote learning and strict discipline, sidelining indigenous knowledge systems and participatory learning methods. The legacy of such colonial education systems has had a lasting impact, leading to the persistence of teacher-centered pedagogies in post-colonial educational contexts.

Transitioning from the 'chalk and talk'-method to more interactive and participatory teaching approaches is essential for effective EE. This shift not only enhances student engagement but also fosters a deeper understanding of environmental issues, empowering learners to take proactive roles in conservation efforts. To address the limitations of traditional and colonial methods, there has been a call to reorient

education systems toward practical EE pedagogies. These include linking EE to real-life contexts, incorporating study tours, field exposure, outdoor learning, activity-based methods, and using teaching aids such as videos and pictures. Additionally, strategies like problem-based learning, showcasing the effects of environmental degradation, establishing school gardens, and integrating fieldwork have been identified as impactful ways to make EE more engaging and relevant. Some of the pedagogical approaches have shown positive contributions in Israel. Tal and Peled (2017) report that all the schools in Israel celebrate EE by holding special days such as 'Environment Days' or 'Peak Days in which the entire school is engaged in more experiential learning about the environment, express inclusiveness and interdisciplinary nature of EE and they 'colour the schools green'. To achieve this, Misiaszek (2016), recommends an ecopedagogical paradigm shift in environmental teaching and ecopedagogy to be an essential element of citizenship education for effective environmental pedagogies. Above all, it was emphasized that home/community-school collaboration in providing EE for youth is vital for consciousness building.

The participants identified curriculum and pedagogical challenges such as curriculum overload and examination demands for syllabus coverage; EE not given the right attention by curriculum developer and students; no specific EE subject in the curriculum (integrating EE in other subjects); and need to timely update our curriculum; little/non-involvement of secondary school students in curriculum development; lack of resources for practical learning of EE; failure of students to apply what they learn on their daily life; and crosscutting nature of environmental issues.

> The syllabus is too demanding. While I need to teach environmental issues with practical sessions, I need to rush to cover the syllabus. I was always forced to teach theory for my students to pass their examinations. Maybe curriculum developers should think of reducing curriculum overload to allow us to help students relate environmental concepts with real-life situations (FGD, Teachers Secondary School 1).

The current study revealed that the priorities in schools are on academic achievement to allow for advancement in a growing and changing society hence EE is being given a back seat by system implementers. This was also observed by McCrohan (2017) who argued that the formal education system in Tanzania suffers from a lack of staffing and resources, thus, environmental concepts and interests are relegated to school-based clubs which are also few since most schools don't have enough teachers and those working in rural schools are already overworked with regular class responsibilities. Similarly, Kimaro (2018) discovered the integration of EE by school teachers in their teaching is ineffective due to several constraining factors. Among the observed factors include teachers' competence and motivation being low due to a lack of resources and professional training, large class sizes and workload as well as lack of government priority on environmental issues.

The dominance of theoretical teaching in many educational systems, including EE, contrasts sharply with the principles of the Ecopedagogical Pyramid Framework, which emphasizes a balance between theoretical

knowledge and practical engagement to foster transformative learning. The framework critiques traditional education models that prioritize rote memorization and passive learning, advocating instead for active, participatory, and reflective pedagogies. The Framework offers a robust alternative by emphasizing a holistic approach that integrates awareness, critical reflection, ethical engagement, and action. By bridging the gap between theory and practice, this framework ensures that EE is not only informative but also empowering and transformative.

Media and environmental education politics

Media range from entertainment to news media, spanning traditional or mass media such as television, films, books, flyers, newspapers, magazines, and radio, as well as new media such as the Internet in general, Web 2.0, and social media (Luedecke & Boykoff, 2017). Media have a strong influence on policy decision-making, attitudes, perspectives, intentions, and behavioural change, but those connections can be challenging to pinpoint; consequently, examinations of elite news coverage of climate change, particularly in recent decades, have sought to gain a stronger understanding of these complex and dynamic webs of interactions. Media has an important role in developing environmental consciousness in the community including students in secondary schools. The participants urged the government to strengthen the use of popular media, both traditional and social media, for EE and awareness.

> Environmental education should be strengthened. The government should emphasize this. People should know the importance of the environment as well as the effects emanating from environmental degradation/pollution. They need to know the magnitude of the environmental problems created by human beings. …Social media should be used to reach as many people as possible. In the national Televisions and radios, there should be special programmes on environmental matters (FGD, Students Secondary School 1).

There is a need to use media as a strategic communication outlet to promote knowledge of the environment, keep people up to date about the catastrophic impacts of human development and help them know about sustainable development. However, we found that the media does not critically and fairly present environmental reality as depicted in the vignette below:

> When you look at the media, be it newspapers or TV, they broadcast various economic activities. Almost all economic activities have an impact on the environment, direct or indirect. You will see them showing the positive side of the activities and their products. You will never see them showing the environmental impacts brought by the process of producing such a product or service (FGD, Teachers Secondary School 2).

> Media should be used to provide environmental education to the community and work with the business community to do so. But you find them making positive advertisements for the products, not showing the other side of the products, their effects on the environment and how to best use them for environmental protection (FGD, Teachers Secondary School 1).

There are robust shreds of evidence that rural residents have a problem accessing information via media as compared to those in urban areas because of the lack of infrastructure in rural areas which contributes to the digital divide (Seretse et al., 2018). In the present study, we found similar evidence that there is little

media influence in rural and some urban areas thereby hindering access to environmental awareness information in the country. An expert in EE noted:

> Media has an influence, but not in the rural areas. Even in urban areas, it is still challenging. Tanzanians are very reluctant to search for important information. For rural areas, media is not a productive approach. We should invest in education for sustainable development (Interview, Expert 2).

Paulo Freire's views on media, education, and political systems intersect with EE. He acknowledges media's influence on public consciousness and critiques its potential to perpetuate oppressive ideologies. In EE, media frames environmental issues, often influenced by political and economic interests. Freire advocates for critical media literacy, encouraging individuals to question and analyze narratives. He emphasizes conscientization, urging educators and learners to critically examine media representation and engage in dialogue to challenge exploitative practices.

The intersection of media, EE politics, and the Ecopedagogical Pyramid Framework underscores the dual role of media as both an enabler and a potential barrier to effective EE. By aligning media practices with the framework's levels—foundational, secondary and exploratory—media can become a powerful ally in fostering a more informed, critically engaged, and proactive global citizenry committed to environmental sustainability.

The state and the EE politics in secondary schools

The state has an important role to play in fostering political engagement, that is, in engaging people in political action and stimulating them to participate in politics related to sustainability concerns. We found that there have been government initiatives in place to ensure that EE is integrated into the school curriculum. For instance, there are policy framework(s) for EE at all levels of education. That is, EE has been integrated into different subjects such as Geography, Civics/General studies, and natural sciences. Albeit in disjointed and smaller topics, students are exposed to environmental issues, environment-human interface, and conservation mechanisms. Participants were aware of the curricula framework which requires integration of EE in other subjects as reiterated by an Environmental Expert:

> It is very important to start teaching environmental education from pre-primary school up to high school. I checked on the 2014 Education and Training Policy, it stipulates that the Government will put in place mechanisms to ensure that environmental themes are integrated in curricula at all levels of education. This ensures that sustainable environmental management starts from the lower levels (Interview, Expert 1).

We argue that one important way in which the state could be linked to successful environmental outcomes of societies, such as sustainability, is through its relation to public support for environmental policy and practice. As the main financier of education in Tanzania, the state has the responsibility to ensure that EE is effectively delivered in schools. There is fee subsidy from primary to secondary education through

capitation grants and fee compensation systems. In the expenditure framework, part of the money is meant for environmental management activities as revealed:

> The government is providing capitation grants and fee compensation for all public schools such as this. Part of the money is directed to be used for environmental management such as buying cleaning and hygiene materials, and others for study tours. I think this is a very good government initiative (FGD, Teachers Secondary School 1).

However, the participants were of the view that the government should do more to ensure EE is fully implemented in schools for sustainability. There is no question that EE needs sound materials and adequate training of educators to provide students with information for rational decision-making. Participants urged the government to make concerted efforts to ensure that the teaching and learning environment for EE is conducive. There should be more money for field trips and study tours. There should be sufficient provision of teaching and learning materials such as computers, projectors, different teaching aids, and large-size pictures.

Freire argued that education is politically influenced, and the state often uses schooling systems to reinforce dominant ideologies and maintain power structures. This can affect the content, delivery, and purpose of EE in secondary schools. The state's role is complex, with competing priorities and socio-economic factors affecting its implementation. To be effective, EE requires political support prioritizing sustainability and critical pedagogy, including funding for teacher training and context-specific curricula.

The state's involvement in EE politics in secondary schools is crucial for the success of the Ecopedagogical Pyramid Framework. However, political priorities, resource allocation, and accountability can limit the effectiveness of EE. The state's role in shaping EE politics in secondary schools is pivotal, as it can influence the curriculum's content, resource allocation, and implementation. Opportunities for achieving this include prioritizing action-based learning, partnering with NGOs, and decentralizing curriculum development.

Conclusions

The study investigates current environmental pedagogies in Tanzania to determine the contextual needs of re-orienting education towards environmental justice through ecopedagogy. The study highlights the importance of EE in addressing global challenges such as pollution and resource overutilization. It emphasizes the need for a deeper integration of environmental education, promoting critical reflection, ethical engagement, and active participation. The Ecopedagogical Pyramid Framework is particularly relevant in this context, helping students develop these essential environmental competencies. The study also emphasizes the interconnectedness of global environmental issues, emphasizing the importance of local actions contributing to global sustainability. The Ecopedagogical Pyramid Framework supports this

perspective by promoting ethical engagement and collaboration, encouraging collective responsibility and sustainable actions across borders.

EE is crucial for enabling students to engage in sustainable practices and contribute to environmental conservation. However, there is a significant gap in the implementation of sustainable education, with EE primarily integrated into geography and biology subjects. The study calls for a more multidisciplinary approach that bridges knowledge with socio-political and ecological realities, cultivating responsibility, ethical behavior, and active participation in sustainability efforts. A gap in Tanzania's current EE pedagogies is evident, particularly the reliance on the traditional "chalk and talk" approach that limits the development of environmentally conscious citizens. The study advocates for more interactive, participatory teaching methods like field visits, study tours, and activity-based learning, as well as home-school-community collaboration.

The study also emphasizes how media, especially in secondary schools, shapes environmental consciousness. It does, however, draw attention to the shortcomings in the way the media portrays environmental issues, frequently emphasizing economic activity without considering its effects on the environment. To encourage students to interact with larger social, economic, and political settings, the study advocates for increased critical media literacy in environmental education. Finally, attaining long-term environmental results depends on the state's involvement in fostering sustainability through environmental education. Funding and resources for environmental education, such as assistance for study tours, field trips, and instructional materials, must be given top priority by the government. As the cradle of humanity and the source of our prosperity, Darder (2010) reminds us in the poem described above to reestablish our connection with the earth. This is significant because a safe and healthy environment is essential to both human survival and a robust economy.

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