# THE CONTRIBUTION OF EDUCATION AND ADVOCACY STRATEGIES IN RAISING AWARENESS OF ENVIRONMENTAL ISSUES AMONG SECONDARY SCHOOL STUDENTS IN LUSHOTO DISTRICT, TANZANIA

**Nuhu Ernest Mtekele**
Assistant Lecturer (Development Studies)
Institute of Judicial Administration, Lushoto, **TANZANIA**

## ABSTRACT

Environmental issues such as deforestation, soil erosion, water pollution, and biodiversity loss are significant challenges facing communities worldwide, including in Lushoto district, Tanzania. Secondary school students represent a crucial demographic for environmental awareness efforts due to their potential to influence societal attitudes and behaviours toward environmental conservation. This essay investigated the contribution of education and advocacy in raising awareness of environmental issues among secondary school students in Lushoto district, Tanzania. The participants involved secondary school students from five secondary schools. Methods of data collection were interviews and focus group discussions. The results show that the integration of environmental issues into the education curriculum, experiential learning, guest lectures and workshops, student-led initiatives, community engagement, and media and communication were the education and advocacy strategies in raising awareness of environmental issues among secondary school students in Lushoto district, Tanzania strategies. Therefore, this study recommends that collective measures among environmental stakeholders should work hand in hand to provide environmental education to students so that they become informed on how to preserve them.

**Keywords:** Education, advocacy, awareness, environmental issues, secondary school students.

## INTRODUCTION

Environmental issues have become increasingly prominent in global discourse as humanity grapples with the urgent need for sustainable solutions to preserve our planet's natural resources and ecosystems (Mwendwa, 2017). Among the various stakeholders in this endeavour, secondary school students represent a crucial demographic whose awareness, understanding, and actions can significantly influence the trajectory of environmental conservation efforts (Pirzado, 2018).

Environmental preservation refers to the practice of protecting and conserving natural resources, ecosystems, and biodiversity to maintain their ecological integrity and sustain their essential functions and values (Sachs et al., 2019). It involves preventing or minimizing human-induced environmental damage and ensuring the long-term sustainability of ecosystems for the benefit of present and future generations. Environmental preservation encompasses various actions and strategies, including habitat conservation, wildlife protection, sustainable resource management, pollution control, and the promotion of environmentally friendly practices (Toth, 2016).

Environmental preservation, the proactive effort to safeguard natural resources, ecosystems, and biodiversity, is paramount to ensuring the well-being of present and future generations. According to Jose, Patrick, and Moseley (2017), environmental preservation is essential for maintaining ecological

balance and biodiversity, the foundation of healthy ecosystems. Biodiversity ensures resilience to environmental changes, supports ecosystem services such as pollination, soil fertility, and climate regulation, and contributes to the stability of food webs and nutrient cycles. Similarly, Kalungwizi, Krogh, Gjøtterud, and Mattee (2020) maintain that preserved ecosystems provide a multitude of ecosystem services essential for human well-being, including clean air and water, fertile soil, climate regulation, and natural resources such as food, fuel, and medicine. Additionally, ecosystem services contribute to economic prosperity, food security, and public health, making environmental preservation critical for sustainable development and human prosperity (McCarthy, 2016).

Environmental preservation plays a crucial role in mitigating climate change by sequestering carbon dioxide, reducing greenhouse gas emissions, and preserving carbon sinks such as forests and wetlands (Kiger & Varpio, 2020). Thus, preserved ecosystems contribute to climate resilience by buffering against extreme weather events, regulating local climates, and providing natural barriers against coastal erosion and flooding (Verma & Dhull, 2017). In the same realm, environmental degradation, including air and water pollution, deforestation, and habitat destruction, poses significant risks to human health (Wanchana, Inprom, Rawang, & Ayudhya, 2020). In this regard, preserving clean air, water, and natural landscapes is essential for reducing respiratory diseases, waterborne illnesses, and mental health disorders associated with environmental degradation (Wolff, 2020).

Environmental preservation has cultural and spiritual significance for indigenous communities and traditional societies, serving as sources of identity, knowledge, and heritage (World Bank, 2019). Thus, preserving cultural landscapes, sacred sites, and biodiversity-rich regions honours cultural diversity, promotes social cohesion, and strengthens connections between people and the natural world (World Bank, 2019). McCarthy (2016) observes that environmental preservation is not antithetical to economic growth but rather a prerequisite for long-term prosperity and sustainable development. So, investing in ecosystem conservation and restoration generates economic benefits through job creation, tourism revenue, and ecosystem services that support livelihoods and local economies.

These observations show that environmental preservation is indispensable for sustaining life on Earth and promoting human well-being, prosperity, and equity. By recognizing the interconnectedness of ecological health, social welfare, and ethical responsibility, we can embrace environmental preservation as a shared endeavour and prioritize conservation efforts that protect and restore ecosystems for the benefit of all.

Numerous studies in various contexts support the notion that several methods are used to preserve environments, each targeting different aspects of ecosystem health and sustainability (Nguyen & Clark, 2018; Tran & Lopez, 2019). The study conducted by Patel and Hernandez (2020) found that protecting natural habitats, such as forests, wetlands, and coral reefs, is crucial for preserving biodiversity and ecosystem functions. This involves establishing protected areas, national parks, and nature reserves to safeguard critical habitats from human encroachment and exploitation. Zint (2013) maintains that natural habitats serve as homes and breeding grounds for a vast array of plant and animal species. Protecting these habitats ensures the availability of suitable living spaces for diverse organisms, allowing populations to thrive and maintain healthy ecosystems. Moreover, UNESCO (2021) notes that natural habitats harbour a wide variety of species, contributing to biodiversity. High levels of biodiversity provide resilience to ecosystems, increasing their ability to adapt to environmental changes, withstand disturbances, and recover from disruptions. Furthermore, Verma and Dhull (2017) observe that intact

natural habitats provide essential ecosystem services that support human well-being. These services include clean air and water, soil fertility, pollination, nutrient cycling, climate regulation, and flood control. Preserving these habitats ensures the continued provision of these services, which are vital for agriculture, fisheries, water supply, and climate stability. On a similar note, the World Bank (2019)) argues that many organisms rely on natural habitats for food, shelter, and resources. Forests, wetlands, and coral reefs are rich sources of food, medicine, building materials, and other natural resources that sustain human livelihoods and support local economies.

A study conducted in England by Rodriguez and Kim (2018) on environmental advocacy in secondary schools with a focus on challenges and opportunities revealed that preserved ecosystems provide a multitude of ecosystem services essential for human well-being, including clean air and water, fertile soil, climate regulation, and natural resources such as food, fuel, and medicine. Ecosystem services contribute to economic prosperity, food security, and public health, making environmental preservation critical for sustainable development and human prosperity. They further contend that ecosystem services, such as the supply of freshwater, timber, fisheries, and agricultural products, form the foundation of many economic activities, providing essential raw materials for various industries and sectors. Similarly, the study by Ali, Abduh, Mahmud, and Dunakhir (2023) in Indonesia found that ecosystem services, including carbon sequestration, air purification, and climate regulation, contribute to mitigating climate change impacts and improving air quality, thereby reducing potential economic costs associated with climate-related disasters and health issues. In China, the study by Du, et al. (2018) found that ecosystem services, such as pollination, soil fertility, and natural pest control, bolster agricultural productivity, leading to increased crop yields and enhanced food security, thus positively impacting the agricultural economy. In England, Gandolfi (2023) found that ecosystem services, such as scenic landscapes, biodiversity, and natural attractions, underpin the tourism and recreation industries, driving economic growth through visitor spending, job creation, and the development of related infrastructure and services.

Another study conducted by Nasihah and Tabroni (2023) in Indonesia revealed that adopting sustainable practices for resource extraction, such as forestry, fishing, and agriculture, helps prevent overexploitation and depletion of natural resources. This involves implementing regulations, quotas, and monitoring systems to ensure that resource extraction is conducted in a manner that minimizes ecological impact and supports long-term sustainability. Moreover, there was a study conducted by Khoiri, et al. (2022) on adopting sustainable practices for resource extraction. The study found that adopting sustainable practices for resource extraction was essential for preventing overexploitation and the depletion of natural resources. They further contend that by prioritising ecosystem health, biodiversity conservation, and long-term economic viability, sustainable practices support the sustainable management of natural resources, ensuring their availability for current and future generations. Embracing sustainable resource extraction practices is fundamental to achieving a harmonious balance between human development and the preservation of the environment.

In Malaysia, a study was conducted by Aminrad, et al. (2012) on the role of students in environmental preservation. The study revealed that environmental degradation, including air and water pollution, deforestation, and habitat destruction, poses significant risks to human health. Thus, preserving clean air, water, and natural landscapes is essential for reducing respiratory diseases, waterborne illnesses, and mental health disorders associated with environmental degradation. In Nigeria, the study by Jekayinfa and Yusuf (2008) on the teachers' opinions on the incorporation of environmental education in the

Nigerian primary school curriculum disclosed that many ecosystems hold cultural and spiritual significance for indigenous communities and traditional societies, serving as sources of identity, knowledge, and heritage. So, preserving cultural landscapes, sacred sites, and biodiversity-rich regions honours cultural diversity, promotes social cohesion, and strengthens connections between people and the natural world. In Kenya, the study by Kamau (2019) on environmental preservation found that environmental preservation is not antithetical to economic growth but rather a prerequisite for long-term prosperity and sustainable development. Thus, investing in ecosystem conservation and restoration generates economic benefits through job creation, tourism revenue, and ecosystem services that support livelihoods and local economies. Another study by Sunzu (2021) in Zambia found that environmental preservation is a moral imperative rooted in intergenerational equity and justice principles. Thus, every individual and community has a responsibility to safeguard the environment for current and future generations, respecting the intrinsic value of all living beings and ecosystems.

In general, from the literature, it has been shown that environmental preservation is indispensable for sustaining life on earth and promoting human well-being, prosperity, and equity. By recognizing the interconnectedness of ecological health, social welfare, and ethical responsibility, we can embrace environmental preservation as a shared endeavour and prioritize conservation efforts that protect and restore ecosystems for the benefit of all. Through collective action, informed decision-making, and a commitment to stewardship, we can secure a sustainable future for ourselves and generations to come. In Tanzania, little is known about the contribution of education and advocacy strategies to raising awareness about environmental issues among secondary school students. This paper therefore aims to fill the gap in the literature by addressing the following questions: What are the strategies put in place in schools for students' environmental preservation? How are those available strategies effective?

## METHODOLOGY

The study was designed to investigate the contribution of education and advocacy strategies to raising awareness of environmental issues among secondary school students in Lushoto district, Tanzania. The study employed the qualitative approach as a method of inquiry. Specifically, data were collected through focus group discussions and interviews. The qualitative approach was chosen because it provided rich, detailed insights into complex phenomena, allowing a researcher to explore the underlying reasons, motivations, and contexts that shape human behaviour and decision-making. Moreover, the qualitative research approach allows a researcher to adjust the approach based on emerging findings, unexpected patterns, or new research questions, leading to a deeper exploration of the subject under investigation. Furthermore, qualitative research emphasises understanding phenomena within their natural context, enabling the researcher to capture the nuances and intricacies of social, cultural, and environmental influences on human experiences and behaviours.

Focus group discussion was chosen as a data collection tool because it facilitates interaction among participants, allowing for the exchange of ideas, experiences, and perspectives, which leads to the generation of new insights through group synergy. Moreover, focus group discussions yield rich and detailed data, capturing not only participants' verbal responses but also their non-verbal cues, emotions, and group dynamics, providing a nuanced understanding of the topic under investigation. Furthermore, focus groups allow for in-depth exploration of topics through probing questions, follow-up inquiries, and the opportunity for participants to elaborate on their responses, providing comprehensive insights into the subject matter (Creswell & Creswell, 2018). Data for the study were collected from secondary schools found in Lushoto district, Tanga region, from August to December 2023. These schools were

purposefully selected because they have environmental clubs for students, hence becoming potential areas to collect data.

Semi-structured interviews were conducted with school environmental teachers because it allows for a balance between structure and flexibility. While there is a predetermined list of questions or topics to cover, the interviewer has the freedom to explore interesting points raised by the interviewee. This flexibility enables the interviewer to delve deeper into specific areas of interest or to adapt the interview based on the responses received, resulting in richer data and insights. Moreover, semi-structured interviews encourage participants to provide detailed and nuanced responses. This richness of data yields valuable insights into participants' experiences, perspectives, and attitudes, providing a more comprehensive understanding of the topic under investigation. Additionally, semi-structured interviews capture unexpected or unanticipated information that might not emerge in more rigidly structured interview formats. Lastly, semi-structured interviews often facilitate greater participant engagement compared to highly structured formats. Because these interviews allow for a conversational style, participants feel more comfortable expressing themselves and sharing their thoughts, experiences, and opinions about issues under investigation. This increased engagement led to more candid responses and a deeper exploration of the topic, ultimately enhancing the quality and validity of the data collected.

The participants were drawn from five government schools. A total of five focus group discussions were conducted in five secondary schools. Each group consisted of eight participants. Similarly, a total of five interviews were conducted in five schools. The information from the focus group discussions and interviews was audio recorded and later transcribed verbatim. The data were analysed using the thematic approach as proposed by Braun and Clarke (2021), whereby appropriate themes were identified, described, and illustrated by the quotes of participants. Earlier on, before commencing data collection, a research permit was obtained from the District Executive Director. Thereafter, informed consent to conduct the study was also obtained from the respective schools. Confidentiality of the information gathered and anonymity of the participants were ensured.

**RESULTS**
Several issues emerged from the focus group discussions and interviews regarding the contribution of education and advocacy strategies to raising awareness of environmental issues among secondary school students in Lushoto district, Tanzania. These are organised into six themes, which include the integration of environmental issues into the education curriculum, experiential learning, guest lectures and workshops, student-led initiatives, community engagement, and media and communication. These are discussed below.

***The integration of environmental issues into the education curriculum***
Integrating environmental issues into the education curriculum in Tanzania is essential for promoting sustainability, empowering future generations, and preserving the country's natural heritage. By providing students with the knowledge and skills to address environmental challenges, Tanzania works towards a more sustainable and prosperous future. It was reported that Tanzania, like many other countries, faces environmental challenges such as deforestation, soil erosion, pollution, and habitat destruction. By educating students about these issues, the curriculum promotes a culture of sustainability and responsible environmental stewardship, which is essential for the country's long-term development. One of the participants was quoted as:

> Education is key to raising awareness about environmental issues among students. By incorporating environmental topics into the curriculum, students become more knowledgeable about the importance of conservation, biodiversity, climate change, and sustainable development (Interview with School Environment Teacher, School C).

The quotation underscores the significance of education in fostering awareness and understanding of environmental issues among students. By incorporating environmental topics into the curriculum and engaging students in meaningful learning experiences, schools play a vital role in shaping environmentally conscious citizens who are equipped to address the challenges of the future.

During the focus group discussions with students, it was found that educating students about environmental issues empowers them to become active participants in addressing these challenges. By learning about environmental science, conservation strategies, and sustainable practices, students developed the knowledge and skills needed to contribute positively to their communities and the environment. Students were quoted as:

> Through education, we learn about the various environmental challenges facing our communities and the world. This understanding helps us recognize the importance of environmental conservation and the consequences of unsustainable practices (FGD, Students in School E).

The quotation shows that by learning about environmental challenges, students develop an awareness of the importance of environmental conservation. They come to understand the significance of preserving natural resources, protecting biodiversity, and mitigating environmental degradation. This awareness extends beyond personal interests to recognize the broader societal and global implications of environmental conservation efforts. Moreover, the quotation underscores that education is a means through which individuals gain knowledge about environmental challenges. It suggests that education serves as a platform for learning about issues such as pollution, deforestation, climate change, habitat loss, and resource depletion. This knowledge is crucial for students to comprehend the complexity and urgency of environmental problems.

### *Experiential learning*

The findings revealed that experiential learning involved hands-on experiences that allowed students to directly engage with environmental issues. It was reported that students participated in field trips to local ecosystems, such as forests or rivers, where they observed biodiversity, learned about ecosystems, and witnessed environmental challenges first-hand. These experiences made environmental issues more tangible and relevant to students' lives, enhancing their understanding and appreciation of the natural world. One of the participants was quoted as:

> Field trips provide students with the opportunity to engage in hands-on learning experiences that cannot be replicated in the classroom. By immersing themselves in the natural environment, students can observe, touch, and interact with various elements of the ecosystem, enhancing their understanding of ecological concepts and processes (Interview with School Environment Teacher, School A).

The quotation shows that through hands-on experiences in natural environments, students developed a more nuanced understanding of ecological concepts and processes. By seeing ecological principles in action, such as adaptation, competition, and symbiosis, students gained a deeper appreciation for the complexity and interconnectedness of ecosystems. This firsthand experience enhanced their comprehension of ecological concepts and fostered a holistic understanding of the natural world. Moreover, the quotation indicates that field trips enabled students to observe ecological phenomena and processes in real time. By witnessing natural interactions, such as predator-prey relationships, plant

succession, or nutrient cycling, students gained insights that go beyond textbook knowledge. Observational learning allowed students to make direct connections between ecological concepts and real-world phenomena, enhancing their understanding and retention of the material.

In the same realm, it was reported that experiential learning empowered students to take action on environmental issues. Students reported that through experiential learning, they participated in community clean-up events, tree-planting initiatives, or environmental advocacy campaigns. Thus, by actively engaging in environmental conservation efforts, students developed a sense of agency and efficacy, realizing that they had made a tangible difference in addressing environmental challenges. Students were quoted as:

> By actively participating in conservation activities such as tree planting or recycling initiatives, students take ownership of environmental issues affecting their communities. They recognize that they have a role to play in addressing these challenges and feel a sense of responsibility to contribute to positive change (FGD with Students in School D).

The quotation emphasizes that through participation in conservation activities, such as tree planting, or recycling initiatives, students developed a sense of ownership over environmental issues. By actively contributing to positive change in their communities, students recognized that they had a role to play in addressing environmental challenges. This sense of ownership instills a feeling of responsibility towards the environment and motivates students to take action. Moreover, the quotation shows that engaging in conservation activities allowed students to recognize the individual impact they had on environmental issues. By planting trees, or recycling waste, students directly contributed to improving the health of their local environment. This recognition of their agency and effectiveness empowered students to take responsibility for their actions and make a positive difference.

### *Guest lectures and workshops*

The findings revealed that guest lectures provided students with the opportunity to learn from experts in the fields of environmental science, conservation, and sustainability. These experts often brought firsthand knowledge, research findings, and practical insights into environmental issues, enriching students' understanding of complex concepts and current environmental challenges. During interviews, it was reported that schools had a culture of inviting guests who were experts in environmental issues to talk to students on various issues regarding environmental education. One of the participants explained as follows:

> Guest lectures and workshops often involve interactive activities, discussions, and Q&A sessions, which engage students in active learning. This interactive format encourages students to ask questions, share their perspectives, and participate in meaningful dialogue with guest speakers. Through these interactions, students deepen their understanding of environmental issues and develop critical thinking skills (Interview with School Environment Teacher, School B).

Similarly, another participant added that:

> Guest lectures provide students with the opportunity to learn from experts in the fields of environmental science, conservation, and sustainability. These experts often bring firsthand knowledge, research findings, and practical insights into environmental issues, enriching students' understanding of complex concepts and current environmental challenges (Interview with School Environment Teacher, School A).

The quotations underscore the value of interactive guest lectures and workshops in promoting active learning, student participation, deepening understanding, and the development of critical thinking skills

in the context of environmental education. By providing opportunities for students to engage with guest speakers and their peers in meaningful dialogue, these sessions enhanced the overall learning experience and empowered students to become informed and engaged environmental stewards. Moreover, the quotations highlight the value of guest lectures in enhancing students' educational experiences and preparing them to address the complex environmental challenges of the 21ˢᵗ century. By providing access to expert knowledge, firsthand experiences, and practical insights, guest lectures enrich students' understanding of environmental science, conservation, and sustainability, empowering them to become informed and engaged environmental stewards.

### *Student-led initiatives*

The findings revealed that student-led initiatives empowered students to take an active role in addressing environmental issues. It was reported that by leading initiatives such as environmental clubs, awareness campaigns, or sustainability projects, students became agents of change within their schools and communities. This hands-on involvement fosters a sense of empowerment and ownership over environmental issues, motivating students to become actively engaged in environmental advocacy and action. During the focus group discussions, students disclosed the following:

> Student-led initiatives provide opportunities for peer-to-peer education and influence. When we take the lead in organizing environmental activities and campaigns, we have a unique ability to connect with our peers and inspire them to get involved. Through peer education, we share knowledge, raise awareness, and mobilize our classmates to take action on environmental issues, creating a ripple effect of positive change within the student body (FGD with Students in School C).

The quotation emphasizes the importance of peer-to-peer education and influence in student-led initiatives. Students have a unique ability to connect with their peers and inspire them to get involved in environmental activities and campaigns. By leading by example and demonstrating their commitment to environmental issues, student leaders motivate their classmates to take action and become actively engaged in addressing environmental challenges.

The interviews conducted with the participants revealed that student-led initiatives often showcased creativity and innovation in addressing environmental challenges. Whether it is organizing eco-friendly events, implementing recycling programmes, or developing sustainable solutions for school facilities, students bring fresh perspectives and innovative ideas to the table. This creativity not only made environmental initiatives more engaging and impactful but also encouraged students to think critically and problem-solve creatively in the face of environmental challenges. One of the participants was quoted as:

> Creative and innovative initiatives often promote sustainable practices and behaviours. Whether through the development of eco-friendly technologies, the implementation of recycling programs, or the design of sustainable infrastructure, student-led projects can inspire the adoption of sustainable practices within schools, communities, and beyond. By promoting sustainability, these initiatives contribute to the conservation of natural resources and the protection of the environment for future generations (Interview with School Environment Teacher, School E).

The quotation highlights that creative and innovative initiatives serve as catalysts for promoting sustainable practices and behaviours. These initiatives encompass a wide range of activities, including the development of eco-friendly technologies, the implementation of recycling programmes, and the design of sustainable infrastructure. By actively engaging in these projects, students demonstrated a

commitment to environmental stewardship and inspired others to adopt sustainable practices in their daily lives.

### *Community engagement*

The findings revealed that community engagement provided students with local insights, resources, and collaborative opportunities. The participant was quoted as:

> Community engagement allows students to understand environmental issues within their local context. By collaborating with local organizations, government agencies, and community members, students gain insights into the specific environmental challenges facing their communities (Interview with School Environment Teacher, School B).

This quotation emphasizes the significance of community engagement in providing students with a deeper understanding of environmental issues within their local context. It shows that community engagement enables students to understand environmental issues within the context of their communities. By interacting with local organizations, government agencies, and community members, students gained firsthand knowledge of the environmental challenges that affect their surroundings. This direct engagement allowed students to grasp the relevance and importance of environmental issues in their daily lives.
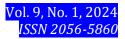
### Media and communication

The findings revealed that media platforms, such as newspapers, television, radio, and social media, had a wide reach and amplified environmental messages to a large audience. Through media coverage, students raised awareness of environmental issues among their peers, families, and the broader community. A participant was quoted as:

> Media platforms serve as educational tools by providing information, resources, and multimedia content on environmental topics. Students can use media channels to disseminate educational materials, share success stories, and promote sustainable practices. Also, media coverage of environmental initiatives led by students inspires others to get involved and take action. By showcasing the impact of student-led projects, media platforms amplify the voices of students' environmental advocates and catalyze broader advocacy efforts for environmental conservation (Interview with School Environment Teacher, School A).

The quotation underscores the importance of media platforms as tools for environmental education, advocacy, and empowerment within the context of student-led initiatives. By providing access to educational resources, facilitating the dissemination of information, inspiring action, amplifying student voices, and catalyzing broader advocacy efforts, media platforms play a critical role in empowering students to become informed and engaged environmental stewards.

### DISCUSSION

This study found that education and advocacy strategies contribute greatly to raising awareness of environmental issues among secondary school students. One of the strategies is the integration of environmental issues into the education curriculum. The findings are in line with Mnyagani (2022) who found that by incorporating environmental topics into the curriculum, students develop a heightened awareness of environmental issues, such as climate change, pollution, biodiversity loss, and resource depletion. This awareness enables students to recognize the interconnectedness between human activities and the environment, fostering a sense of responsibility toward environmental stewardship. Moreover, Verma and Dhull (2017) add that integrating environmental issues into the curriculum

promotes the adoption of sustainable practices among students. Through hands-on learning experiences and classroom discussions, students learn about sustainable living habits, such as energy conservation, waste reduction, water conservation, and sustainable transportation. By practicing these behaviours in their daily lives, students contribute to environmental conservation and promote a more sustainable future. Furthermore, Sund and Wickman (2008) maintain that studying environmental issues encourages students to think critically and develop problem-solving skills. Environmental challenges are often complex and multifaceted, requiring students to analyze information, evaluate evidence, and propose solutions. By engaging with real-world environmental issues, students develop the ability to think critically, consider multiple perspectives, and apply problem-solving strategies to address environmental challenges. Toth (2016) concludes that integrating environmental issues into the curriculum allows students to connect classroom learning to real-world issues. By studying environmental topics in the context of their local communities and global contexts, students see the relevance of their education to pressing societal challenges. This connection fosters a deeper understanding of environmental issues and empowers students to take action to address them in their communities and beyond.

Moreover, the participants who participated in interviews and focus group discussions revealed that experiential learning was one of the advocacy strategies that contributed to raising awareness of environmental issues among secondary school students. The findings can be extrapolated to Pirzado (2018) who found that experiential learning makes environmental issues personally relevant to students' lives. Through experiential activities, students recognize the impacts of environmental degradation on their communities, health, and quality of life. This personal relevance motivates students to learn more about environmental issues, take action to address them, and advocate for positive change. Also, the findings are similar to those of Mwendwa (2017) who found that experiential learning develops a wide range of skills that are essential for environmental advocacy. Students engage in critical thinking, problem-solving, communication, teamwork, and leadership as they participate in experiential activities and projects related to environmental issues. These skills are invaluable for effectively advocating for environmental conservation and sustainability, both now and in the future.

Regarding guest lectures and workshops, the findings acknowledge the positive roles played by environmental experts in imparting knowledge to students on the importance of environmental preservation. The findings are similar to those of Kiger and Varpio (2020) who found that environmental experts bring specialized knowledge, expertise, and credibility to environmental education efforts. With their background in environmental science, conservation, policy, or related fields, experts offer accurate, up-to-date information on environmental issues, solutions, and best practices. Their expertise lends credibility to the information presented, making it more compelling and trustworthy for students. Moreover, Kimaryo (2011) adds that environmental experts serve as inspirational figures and role models for students interested in environmental preservation. Through their passion, dedication, and real-world experiences, experts inspire students to pursue careers in environmental science, advocacy, and conservation. By sharing their journeys and success stories, experts demonstrate the impact that individuals can have on environmental conservation efforts, motivating students to become environmental stewards themselves. Mnyagani (2022) maintains that environmental experts facilitate hands-on learning experiences that deepen students' understanding of environmental issues and preservation strategies. Whether through field trips, workshops, guest lectures, or collaborative projects, experts provide opportunities for students to engage directly with environmental concepts, ecosystems, and conservation techniques. These experiential learning opportunities enhance students' learning experiences and empower them to apply their knowledge to real-world environmental challenges.

 Furthermore, it was found that student-led initiatives empowered students to take an active role in addressing environmental issues. The findings are similar to those of Jose et al. (2017) who found that when students lead initiatives, they take ownership of environmental projects and feel empowered to make a difference. This sense of ownership motivates students to become actively engaged in addressing environmental issues, as they feel personally invested in the success of their projects. Empowered students are more likely to take initiative, show leadership, and advocate for environmental conservation within their schools and communities. In a similar vein, Kiger and Varpio (2020) found that student-led initiatives often showcase creativity and innovation in addressing environmental challenges. Students bring fresh perspectives, innovative ideas, and enthusiasm to their projects, resulting in creative solutions and approaches to environmental issues. By encouraging experimentation and thinking outside the box, student-led initiatives foster a culture of innovation that inspires new ways of tackling environmental problems. Kimaryo (2011) observes that student-led initiatives leverage the influence of peers and foster collaboration among students. When students see their classmates taking action on environmental issues, they are more likely to get involved themselves. Peer influence encourages greater participation in environmental initiatives and creates a sense of community around environmental stewardship.

The findings also revealed that community engagement as a strategy for environmental preservation provided students with local insights, resources, and collaborative opportunities. The findings can be extrapolated to Pirzado (2018) who found that community engagement allows students to tap into local knowledge and context regarding environmental issues. By interacting with community members, organizations, and local leaders, students gain insights into the specific environmental challenges facing their region. This firsthand understanding of local environmental issues enables students to develop more targeted and effective conservation strategies that are tailored to the needs and realities of their community. Similarly, Aminrad, et al. (2012) add that engaging with the community provides students with access to resources and expertise for environmental preservation efforts. Local organizations, government agencies, and community members may offer resources such as funding, equipment, and facilities to support student-led initiatives. McCarthy (2016) maintains that community engagement fosters collaborative opportunities for students to work together with local stakeholders on environmental preservation initiatives. By partnering with community organizations, schools, businesses, and government agencies, students can leverage collective resources, expertise, and networks to address environmental challenges more effectively.

Lastly, the findings indicate that through media coverage, students raised awareness of environmental issues among their peers, families, and the broader community. The findings are in line with Mwendwa (2017) who found that media coverage stimulates dialogue and discussion about environmental issues within communities. When environmental topics are covered in the media, they prompt conversations among students, families, and community members about the importance of environmental conservation and potential solutions. Moreover, Jose, Patrick, and Moseley (2017) found that media coverage amplifies the voices of students and environmental advocates, providing a platform for their messages to be heard. By featuring students' perspectives, experiences, and initiatives, media platforms elevate the voices of young environmental leaders and amplify their advocacy efforts. This increased visibility helps raise awareness of environmental issues and encourages broader public participation in conservation activities. Kiger and Varpio (2020) conclude that when environmental topics are covered in the media, they prompt conversations among students, families, and community members about the

importance of environmental conservation and potential solutions. This dialogue fosters greater awareness, understanding, and engagement with environmental issues at the grassroots level.

## CONCLUSION

Generally, the contribution of education and advocacy strategies to raising awareness of environmental issues among secondary school students is paramount to fostering a generation of environmentally conscious and proactive individuals. Through the integration of environmental topics into the curriculum, experiential learning opportunities, community engagement, media coverage, and student-led initiatives, students are equipped with the knowledge, skills, and motivation to address pressing environmental challenges. These strategies not only educate students about the importance of environmental preservation but also empower them to take meaningful action to protect the planet and advocate for sustainable practices within their communities.

## RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made; Firstly, schools should prioritize the integration of environmental education across various subjects and grade levels. This holistic approach will ensure that students receive consistent exposure to environmental concepts and issues throughout their secondary school experience, reinforcing the importance of environmental stewardship in their academic pursuits. Second, schools should provide more experiential learning opportunities, such as field trips, outdoor activities, and hands-on projects, to engage students in active learning about environmental issues. These experiences not only deepen students' understanding of environmental concepts but also foster a deeper connection to the natural world, inspiring them to take action to protect it. Third, schools should collaborate with local communities, organizations, and experts to enrich environmental education initiatives. By leveraging local resources, knowledge, and expertise, schools can enhance the relevance and effectiveness of their environmental programs, while also strengthening community partnerships and fostering a sense of shared responsibility for environmental conservation. Fourth, schools should empower students to take on leadership roles and become advocates for environmental issues within their schools and communities. Fifth, schools should harness the power of media and technology to amplify their environmental education and advocacy efforts. By leveraging social media platforms, creating multimedia content, and collaborating with local media outlets, schools can reach a wider audience and engage students, families, and the broader community in conversations about environmental issues and solutions.

## ACKNOWLEDGEMENTS

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