



RESEARCH PAPER

Empowering Environmental Stewardship: Pedagogical Approaches for Integrating Green and Clean Land Practices in Educational institutions of Pakistan

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ABSTRACT

The purpose of this qualitative research is to gain in-depth insights into the spectrum of pedagogical approaches used by educators to integrate green and clean land activities in the spectrum of schools in Pakistan. Limited research is available that offers insights about how effective these methods. This research referred a broad academic discussion about pedagogy as a tool to instill an ecologically friendly attitude and urge for greener land education practices. This set of thematic analysis is applied to the frameworks of interviews gathering data. The findings identify a number of structured approaches that include pro-development, mentoring, enabling environment, resources facilitation, community policing, and technology and culture development. These results could provide useful input for preparing practical recommendations and guidelines for educators, policymakers, and other stakeholders to improve environmental education practices and implementation in Pakistani educational institutions.

KEYWORDS Educational Institutions, Environmental Stewardship, Green and Clean Land Practices, Pedagogical Approaches

Introduction

In modern times, every member of society, including educational institutions, cannot ignore the issue of environmental sustainability (Peng et al., 2022). For the past two decades, environmental sustainability has been transformed from uncommon jargon into a much efficiency strategy, and research and policy were developed to strengthen the imprint of these models on educational practices. Given the current implications of climate change and environmental deterioration on societies at large, educators are increasingly seen as potential transformation agents, influencing the role and function that future generations will play in conserving or depleting their surrounding lands (Tsai et al., 2018). Researchers have explored multiple facets of environmental education, pointing to the significance it plays in enhancing ecological literacy and enforcing pro-environmental attitudes for learners (Wang et al., 2021). Nevertheless, an important gap remains unanswered, given the lack of research investigating how educators may incorporate green and clean land practices into their framework as a means of addressing these practices (Tao et al., 2016).

This paper fills the identified gap by focusing on distinct pedagogical methods used by educators to expose them to green and clean land practices incorporation into education. Our paper thus makes a distinct contribution to the general conversations surrounding environmental education by reconstructing concrete examples and approaches to educators looking to instill and build their students' values around

environmental stewardship (Development, 2020). Additionally, we seek to provide empirical explanation for embedding environmental education into the academic syllabuses as the author stresses this will help build responsible citizens who can confront the numerous challenges brought by the 21 st century (Abudukade et al., 2023).

The decision to research this topic is driven by a number of personal and practical factors. First, environmental problems become increasingly urgent, while education has been identified as one of the most transformative tools to influence human behavior to make it sustainable (McCourt et al., 2023). Second, for practical reasons, it is becoming more critical to identify and promote effective approaches to educating educators who need to help learners respond to various environmental challenges. By finding links between the two phenomena, the current research strives to promote change at the grass-roots level, thus contributing to the global effort towards sustainability (Feng et al., 2023).

Literature Review

The discourse around the necessity to promote green and clean land via education has been gaining traction for recent years. This literature review proposes an overview of crafted sources, academic works, and authors that can be referred to in a broad academic discussion about pedagogy as a tool to instill an ecologically friendly attitude and urge for greener land education practices (Abudukade et al., 2023).

Environmental Education and Sustainability

Numerous researchers have emphasized that the key role of education is to address the current environmental issues and support sustainable behaviors among both individuals and professionals. According to Feng, environmental education is an interdisciplinary method with the help of which one can cultivate environmental literacy, certain values, and experiences, shaping agents of change (Feng et al., 2023). Thus, this evidence can serve as background knowledge for the incorporation of the following concepts into the existing curriculum, emphasizing sustainable use of land to eliminate negative environmental consequences: (McCourt et al., 2023).

Pedagogical Approaches

However, several pedagogical methods have been created and used to promote green and clean land where land is but not from an educational viewpoint. One such method is place -based education which acknowledges the surroundings and experiences students pursue in local settings represent a critical strategy for developing ecological consciousness and sustainability globally (Vranic et al., 2016) .. This education will help teachers instill an important futuristic thinking to save the land for future reclamation among students who will learn from their environment . Another method that has been instrumental in promoting clean and sustainable land . level where students indulge in practical activities such as gardening, tree planting, or reclamation, impacting their practical knowledge and mature understanding of how ecosystems interact with human activities . Lastly, it also creates an emotional and psychological relationship with the land (Feng et al., 2023).

Incorporating Indigenous Knowledge and Perspectives:

There has been a growing interest in incorporating Indigenous knowledge and perspectives into environmental educational programs in recent years. Indigenous communities have sophisticated systems of ecological knowledge and can help

educators get excellent insights into ways of sustainable land management . When Indigenous values are integrated into the curricula, it ensures cultural diversity, empowers the relevance of teaching traditional ecological knowledge , and instills in students the message of the bond between humans and nature (Chen et al., 2022).

In conclusion, literature documents the importance of pedagogical approaches in promoting green and clean land practice in education systems. Place-based Education, Experiential Learning, and the incorporation of Indigenous knowledge are credible sources of promoting environmental stewardship and sustainability. Nonetheless, further research is needed to determine the effectiveness of the above pedagogical approaches across different education settings or even their sustainability in promoting land practice (Lin & Ling, 2021).

Material and Methods

The pedagogical approaches used by educators to improve green and clean land practices. These practices fall within the education system's authorization are key research interests. This academic inquiry, influenced by qualitative methods, provides contextually indefinite findings of meaning of educators' experiences, insights, and views exercising Environmental stewardship in their general role (Otani & Cameron, 2017).

Population

For this study, the population is composed of educators across diverse educational settings, not excluding secondary schools, engaged in the ongoing process of teaching and have had the experience or reasonably a retreat to associating the concepts of the environmental stewardship model in their syllabus. These are educators across diverse education settings, including but not limited to secondary schools. The population for this study is purposeful, and well-defined; therefore, this is a sample based on the # of educators in Washington State (L. Haven & Van Grootel, 2019).

Sampling and Sample

The researcher employed purposive sampling in selecting the participants who have diverse educational settings and experiences to maximize possible feedback. Educators are identified through their expertise and contribution to environmental education initiatives. The researcher made an effort to select participants from different geographic locations to present a wide range of perceptions (Busetto et al., 2020).

Data Collection

Potential participants were either approached by email or through professional networks. All preliminary contact should have been made with the notification discussing the study and inclusion criteria (Olmos-Vega et al., 2023). Prior to the interview, each potential participant was to be forwarded a detailed email covering the purpose of the study, research process, and their participation rights. All interviewed provided their informed consent before the commencement. Semi-structured interviews were conducted either in the presence of participants or via video-onference calls due to logistical considerations. Audio-recording of interviews was conducted with all participants' consent to ensure all counted data.

Data Analysis

The qualitative data obtained from interviews were analyzed using thematic analysis. According to Braun and Clarke, thematic analysis is a method of identifying patterns, themes, and codes within the data to facilitate the interpretation of participants' practices and perceptions (Otani & Cameron, 2017). The analysis was conducted through several repetitive stages, including familiarization, coding, identification of major and sub-codes, and validation. A manual coding method was used to enhance data sorting and coding. In summary, this research focuses on the qualitative research methodology aimed at providing better understanding of pedagogical practices of educators concerning the effective promotion of green and clean land practices. The research seeks teachers' perspectives, experiences, and practices towards better promoting environmental education (Busetto et al., 2020).

Data Analysis and Discussion

The researcher drove the following themes through interviews and manuscripts from the 10 participants during the data analysis. The participants' data analysis researchers drive the following mentioned themes through interview manuscripts from the 10 participants. Table number 1, mentions 8 themes with participants' data analysis

Table 1
Pedagogical Approaches Employed by Educators to Incorporate Green and Clean Land Practices

Themes	Participants	Quotes
Experiential Learning and Hands-On Activities	Participant #2	"Engaging students in hands-on activities like planting and caring for a school garden not only teaches them about sustainable agriculture but also fosters a deeper connection to the land."
Interdisciplinary Curriculum Integration	Participant #3-4	"By weaving topics like climate change and biodiversity into subjects like science, social studies, and language arts, educators can provide students with a holistic understanding of environmental issues."
Outdoor Education and Field Trips	Participant #5	"Taking students on field trips to natural areas allows them to witness firsthand the importance of conservation and responsible land management."
Service-Learning and Real-World Application	Participant #6	"Engaging in activities like community clean-ups or habitat restoration projects instills a sense of responsibility and empowers students to make a positive impact."
Project-Based Learning for Problem-Solving	Participant #7-8	"Assigning projects such as designing sustainable urban development plans or creating public awareness campaigns encourages critical thinking and problem-solving skills."
Inquiry-Based Learning and Curiosity	Participant #8	"Encouraging students to ask questions and conduct research on issues like soil conservation or water quality promotes a deeper understanding of environmental science concepts."
Utilization of Technology for Engagement	Participant #9	"Incorporating virtual field trips or online games that simulate environmental scenarios makes learning about green and clean land practices engaging and accessible."
Promotion of Sustainable Practices	Participant #10	"Implementing practices like composting, recycling, and reducing single-use plastics not only reduces our

environmental footprint but also sets an example for students to follow."

Table 1 above summarizes the major themes that have emerged from the data analyzed regarding the aspects related to integrating environmental education into the teaching of the practice. Indeed, the above themes detail how educators can empower themselves in an effort to integrate green and clean land practices in the classroom to enable students to become environmentally-conscious members of society.

Teacher Professional Development to Integrate Environmentalism

Quote: *"Providing educators with training workshops, seminars, and resources that will give them the knowledge, skills, and confidence to be able to properly integrate green and clean land practices within their classrooms."* (Participant #2)

Proposal justifies: Participant #2's point of view shows that teacher-targeted investment in tailored training workshops, seminars, and resources is necessary to provide them with the required knowledge, skills, and confidence to properly integrate environmental education as part of their responsible ethos.

Mentorship Programs for Sustainable Teaching Practices

Quote: *"Pairing novice teachers with experienced mentors who can serve as role models and provide practical advice and feedback on implementing sustainable practices."* (Participant #3-4).

Both Participant #3 and Participant #4 point out the importance of mentorship in supporting new teachers, as such programs can help them get through the first difficulties and ensure a sustainable approach to teaching and environmental education.

Access to Educational Resources for Hands-on Learning

In connection with educational resources, hands-on learning can be achieved through the following: the quotation says the following:

Quote: *"Curriculum materials, lesson plans, and teaching resources should be readily available and easily adaptable to diverse educational settings, allowing educators to customize their instruction to meet the needs of their students"* .

As such, participant #5 highlights the provision of educators with curriculum materials, lesson plans, and teaching resources that must be available and adaptable. Evidently, it is important to enhance resources accessible to educators that are suitable for creating a hands-on experience for students.

Community Collaboration for Real-World Engagement:

Quote: *"Forging partnerships with community stakeholders to bring real-world relevance to classroom instruction and connect students with opportunities for service-learning and environmental action"* . Participant #6.

Forging partnerships with community stakeholders to bring real-world relevance to classroom instruction. This statement suggests that working with external partners, including organizations and individuals, will provide students with the opportunity to engage in service-learning and take meaningful action with respect to the environment.

Integration of Technology for Environmental Education

With respect to the above quote, integration of technology with environmental education was also outlined as follows:

Quote: *“Utilizing online resources, virtual field trips, and interactive simulations can make environmental concepts more accessible and engaging for students, fostering deeper understanding and appreciation”* (Participant #7-8) .

Specifically, participants #7 and #8 mean that when teachers use technology in the classroom, it allows them to create opportunities for students to study the environmental issues under various angles and get interested in learning, thus promoting the understanding and significance of various concepts.

Cultivating a school culture of sustainability

Quote: *“Establishing a school-wide commitment to sustainability, with support from administrators, staff, and students, is the way to create a culture of environmental awareness and responsibility,”* Participant #9

This means that in order to integrate environmental education into the essence of the school, it is necessary to create a culture of environmental awareness and responsibility among administrators, staff, and students.

Continuous Reflection and Evaluation for Improvement

Quote: *“Regular assessment of student knowledge, attitudes, and behaviors related to environmental sustainability can inform instructional decision-making and identify areas for improvement, thereby enabling educators to refine their strategies and interventions over time”* Participant 10.

Through this statement, Participant #10 indicates the significance of regular assessment of student knowledge, attitudes, and behaviors related to environmental sustainability for instructional decision-making and refining teaching strategies over time. It suggests the need for constantly reflecting and evaluating to improve the environmental education process.

This data analysis reveals the numerous aspects of integrating environmental education into the teaching process and suggests several strategies and approaches that educators can use to encourage environmental stewardship in students. Through the constructs and themes of professional development for educators and mentorship, access to resources, collaborating with the community, integrating technology in teaching, promoting positive school culture, and learning and growing, together, educators can successfully implement the green and clean land practices in the classrooms and develop students as environmental enthusiasts.

Conclusion

To sum up, the analysis of the data has enabled discussing various strategies and approaches to integrate environmental education into the teaching process, as well as encourage students to become environmentally conscious citizens. Based on the mentioned findings, such identified themes as teacher professional development, mentorship programs, and access to learning resources, community collaboration, technology, school culture, and reflection can be concluded as relevant and effective.

For these themes, educators engaging in processes such as mentorship programs cannot afford to be limited explicitly. As a new teacher, becoming a part of such programs is recommended, and discovering easily changeable educational materials can ensure engagement with stakeholders' results in an immediate decrease in environmental impact. For their work, it is furthermore suggested that teachers follow up this activity with applicable technology, helping students to comprehend these environmental themes, and even engaging in action research.

Furthermore, creating a foundation of sustainability culture across the school is also important in terms of making awareness and responsibility for the environment the intrinsic characteristics of the school community. Regular feedback and evaluation help teachers to improve their teaching methods and interventions making environmental education effective and meaningful. Therefore, as a result of reflecting on the above-mentioned issues, teachers' practices can foster students' environmental consciousness – tendencies in attitude, knowledge, and skills. With the joint efforts of educators, students, and other educational stakeholders, we can raise a generation of responsible people who truly care about the state of the earth and the achievements of our civilization.

Recommendations

- **Allocate resources to Invest in Comprehensive Professional Development Programs:** Create comprehensive professional development programs oriented on the learners' needs and outcomes for educational organizations and policymakers to fund and produce that will help teachers engage in environmental education with the proficiency, skills, and confidence they require.
- **Expand Mentorship Opportunities:** Mentorship programs should be established that pair novice teachers with experienced ones, allowing them to seek advice and support in developing sustainable teaching. Competing mentors and providing opportunities for education professionals to share their knowledge promote a collaborative education environment.
- **Improve access to educational resources:** Make sure there are sufficient resources for educators, including a robust variety of curriculum materials, lesson plans, and teaching resources that allow for hands-on learning and are appropriate for distinct educational settings. Put money into creating adaptable resources that may be adjusted to the unique situation of students and educators.
- **To Promote Community Collaboration:** Engage with local community stakeholders, such as local environmental groups, government officials, and businesses, focused on establishing at-home instruction in the context of real-life experience. Develop program, teacher, and student-centered support. Promote opportunities for students to take environmental action and develop service-learning programs in collaboration with local organizations.
- **Promote Regular Reflection and Evaluation:** Embed a culture of regular reflection and evaluation into educators' programming and reflection to analyze progress into your schools environmental program. Collectibility data from students' knowledge like the environment prerequisite, attitude and behavior as a basis to guide instruction and improvement.
- **Encourage Continuous Reflection and Evaluation:** Promote a culture of continuous reflection and evaluation among educators to assess the effectiveness of environmental education initiatives. Regularly assess student knowledge, attitudes,

and behavior on environmental sustainability to support instructional decision-making and areas of improvement.

- **Promote Research and innovation:** Provide funding for research and innovation in environmental programming to further understand effective programming and conduct programs. Facilitate collaboration between researchers, educators, and policy-makers to design simple words and implement research on promoting environmental identity in school settings.

The steps to ensure the above recommendations are adopted. Working together on the recommendations above, we can create the best possible future for environmental education and create a generation of students who are prepared to tackle the crisis facing the natural world

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