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Implementation of Experiential Learning Methods in Environmental Education

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ABSTRACT
This study aims to explain the development of environmental education from an ecopedagogical perspective and its implementation using an experiential learning approach. This research employs a descriptive method and utilizes library research by collecting, studying, and analyzing various research findings in the form of journals, books, and government documents relevant to the research topic. The environmental movement of the 1960s-1970s advocated for environmental issues in response to resource exploitation, which exacerbated social and economic inequalities. This pressure led to the emergence of the concept of sustainable development and the integration of environmental education into curricula. However, such education tends to be elitist and lacks practical action, necessitating a return to its praxis roots through ecopedagogy and experiential learning. This approach emphasizes learning based on direct experience, such as sustainable agriculture practices or eco-friendly energy applications, which are relevant to community conditions. Collaboration among the government, private sector, and educational institutions is essential to ensure the effectiveness of this program, ultimately fostering a more inclusive and action-oriented environmental awareness.

Keywords:
Environmental Movement, Environmental Education, Ecopedagogy, Experiential Learning

INTRODUCTION

Climate change has become one of the most frequently discussed issues in various forums, both at the local, national, and international levels. This phenomenon is a major concern due to its widespread impact, leading to crises across multiple aspects of life: social, economic, and environmental. As explained by Adger (2003), climate change not only triggers natural disasters but also affects food security, public health, and economic stability. In response to these challenges, governments worldwide and international organizations have implemented various strategic measures focusing on environmental issues. One of the approaches utilized is the green economy, which encompasses various strategies for achieving sustainable development. Environmental protection policies are also being strengthened through stricter regulations, including carbon emission restrictions and limitations on natural resource exploitation. Additionally, green investments are being promoted to support sustainable projects, along with the development of renewable energy technologies to reduce reliance on fossil fuels. Furthermore, adaptation and mitigation mechanisms are being designed to address the increasingly complex impacts of climate change.

According to Detyothin et al. (2017), these policies will not be effective without support from an environmentally conscious society that acknowledges ecological responsibility as a shared duty. To this end, Feinstein and Machb (2019) propose that environmental education should be incorporated as a fundamental awareness-building instrument. Developing an educational curriculum that includes environmental and climate change issues is essential to fostering students' sense of ecological responsibility (Pauw et al., 2015). Empowering communities to adapt to climate change, especially vulnerable groups such as farmers and coastal populations, is also necessary. A deep understanding of sustainable development principles is expected to enable future generations to adapt and create innovative and eco-friendly products.

Therefore, investment in environmental education and sustainable development is crucial and urgently needed. Ultimately, it will produce a generation that is more environmentally conscious, innovative, and responsible in balancing economic growth, social welfare, and environmental preservation for a more sustainable future.

Regarding its methodology, experiential learning is one of the most suitable approaches for implementing environmental education. This method allows students to learn through direct experiences, thereby enhancing their understanding of environmental issues in a more profound and applicable manner. As Jean Piaget (1952) stated in his cognitive development theory, environmental education based on experiential learning is highly effective in shaping children's understanding of nature. It builds integrative values that position the environment as part of the life system while expanding the scope of education beyond just curriculum delivery. Instead, it serves as a catalyst between ecological efforts and education (Kahn, 2010). Therefore, this paper seeks to explain how environmental education is shaped from an ecopedagogical perspective and how it is implemented using the experiential learning approach.

METHOD

This study employs a descriptive research approach, aiming to depict a contextual condition through data collection, classification, analysis, and interpretation of the investigated topic. This methodology facilitates a deeper understanding of the reality being examined. Additionally, the data collection technique utilized in this study involves library research, wherein various scholarly sources, including journals, books, and government documents relevant to the research topic, are gathered, studied, and analyzed. This library research is particularly focused on the conceptual and theoretical studies of environmental education and the experiential learning approach.

RESEARCH AND DISCUSSION

1. The History and Concept of Ecopedagogy as an Environmental-Based Educational Movement

The resistance movement against capitalism intensified in the 1960s, not only addressing economic and political issues but also extending to concerns regarding the exploitation of natural resources and environmental sustainability. This movement gradually fostered broader environmental awareness, urging society to oppose exploitative modern production systems. The social, economic, and political inequalities exacerbated by capitalism further strengthened the environmental movement’s objectives in challenging the system.

By the 1970s, environmental movements gained broader acceptance across various nations, leading to increased public awareness of the destructive consequences of uncontrolled industrialization. This awareness culminated in the 1972 Stockholm Conference, which marked a pivotal moment in the global environmental movement, as environmental issues were seriously discussed for the first time in an international forum. Academics began recognizing environmental movements as a new social phenomenon with the potential to drive systemic change (Gottlieb, 1993; Hannigan, 1995; Lapka et al., 2012). Academic discourse on environmental issues expanded significantly, highlighting the necessity of a multidisciplinary approach to comprehensively understand the environmental impacts on society and policymaking. Consequently, environmental education became a crucial focus during this period.

As a commitment to promoting environmental education, the 1975 Belgrade Charter was established as a foundational document outlining the fundamental principles of environmental education. This was followed by the 1977 Tbilisi Declaration, which further reinforced the framework of environmental education by defining more structured goals and principles (McKeown & Hopkins, 2003). However, despite these foundational frameworks, environmental education has faced criticism. Warlenius (2022) argues that the initial formulation of environmental education lacked a holistic approach integrating economic, social, political, and ecological aspects (Leicht et al., 2018; Warlenius, 2022). Furthermore, Monroe (2012) critiques the conservative nature of environmental education, which primarily focuses on science-based ecological and conservation knowledge while neglecting the social inequalities resulting from environmental exploitation. Similarly, Kahn (2010) asserts that traditional environmental education risks creating an epistemological dichotomy between "nature" and "wilderness," disregarding the complex relationships between humans and their environment. These critiques underscore the necessity of a more holistic approach to environmental education, such as integrating experiential learning.

The experiential learning approach in environmental education emphasizes direct student engagement with environmental issues. This concept aligns with Paulo Freire's ecopedagogy, which prioritizes experiential learning as the primary mechanism for education. According to Kolb (1984), experiential learning enables students to develop a deeper understanding of concepts through real-world experiences, critical reflection, and practical application in daily life. This approach fosters critical environmental awareness and facilitates concrete actions toward sustainability.

The limitations of the early environmental education models were further debated during the 1992 Rio Conference, where activists and environmental scholars advocated for a more comprehensive educational framework. This led to the development of concepts such as Education for Sustainable Development (ESD) and Ecopedagogy. Ecopedagogy, rooted in Paulo Freire's critical pedagogy, initially emphasized social and political emancipation without explicitly addressing environmental concerns. However, in his later years, Freire integrated environmental issues into socioeconomic and political contexts, advocating for practical actions to combat environmental crises (Kahn, 2010). Unfortunately, his ideas did not receive significant attention in major international environmental conferences and were largely overlooked in existing environmental education policies.

Dissatisfaction with the lack of emphasis on ecopedagogy led to resistance from critical pedagogy scholars, culminating in the establishment of the Ecopedagogy Forum in 1999. This forum, primarily initiated by academics from the "Instituto Paulo Freire," sought to advance Freirean thought and formulate fundamental principles for ESD, which were later adopted by several countries as part of their educational policies. This movement sparked significant debates, especially after UNESCO and UNEP integrated environmental education, population studies, and development into a unified policy framework (Leicht et al., 2018).

According to Warlenius (2022), the increasing prominence of international forums contributed to the evolution of the ESD concept, particularly during the 2012 Rio+20 Summit, which emphasized education's role in advancing the green economy agenda. ESD was incorporated as one of the 17 principles of sustainable development, positioning it as a bridge between environmental education theory and

practice. However, Kahn (2008) contends that ESD remains an interstitial tactic in its developmental phase, sparking new discursive struggles.

The development of ESD as a pedagogical concept also carries the risk of becoming instrumentalist and deterministic, wherein it may serve more as a vehicle for amplifying sustainable development rhetoric rather than fostering participatory and metacognitive engagement among educators and students regarding environmental issues. Consequently, the experiential learning approach is highly relevant in ecopedagogical environmental education. Through experiential learning, students do not passively receive information but actively experience and analyze environmental realities in their surroundings.

Experiential learning in environmental education encompasses various methods, including case studies, community-based projects, simulations, field observations, and reflective discussions. This approach enables students to bridge theoretical knowledge with practical application, fostering a deeper ecological awareness. This aligns with Kahn's (2008) argument that participatory and experience-based education is crucial for cultivating critical consciousness about environmental issues.

Kahn (2008) expresses skepticism toward ESD, viewing it as a potential component of neoliberal agendas that idolize sustainable development discourse while prioritizing business interests over genuine environmental concerns. Therefore, experiential learning in ecopedagogy serves as an effective tool to counter the hidden agendas embedded within neoliberal environmental education paradigms. By allowing students to directly experience the environmental consequences of human activities, they can develop a more critical understanding of sustainability issues and drive tangible actions for social and ecological justice.

Thus, integrating experiential learning within ecopedagogy enhances the effectiveness of environmental education. Through direct experiences, critical reflection, and active participation in sustainability issues, environmental education can cultivate profound ecological awareness and contribute to meaningful social change.

2. Implementation of Experiential Learning in Environmental Education

In the previous section, the author presented theoretical debates, trajectories, and the relationship between ecopedagogy and experiential learning in the learning process. This discussion serves as a reminder that environmental education is not merely a conscious effort directed at academics or students in formal educational settings but is a fundamental right for all members of society to recognize their social realities amid the threats of climate change. The ultimate goal is to create a society that is environmentally aware and socially just. Moreover, Dunkley and Smith (2019) assert that every individual has the right to learn, understand, and internalize the values of sustainable environmental awareness. The development of collective consciousness is thus framed as a moral and ethical imperative. According to Alkhudri et al. (2023), environmental education functions as an instrument for the internalization of environmental awareness in society through five essential dimensions: (1) providing knowledge and understanding; (2) fostering awareness of interconnectivity; (3) influencing behavioral change; (4) promoting active community engagement; and (5) serving as a foundation for sustainable development. To effectively achieve these five dimensions, experiential learning emerges as one of the most relevant and impactful methods in environmental education.

The experiential learning approach in environmental education emphasizes a learning process based on direct experience. Kolb (1984), in his learning model, outlines four key stages of experiential learning: (1) concrete experience, (2) reflective observation, (3) abstract conceptualization, and (4) active experimentation. Within the context of environmental education, these stages enable learners to comprehend environmental issues theoretically while also connecting them to real-life situations.

Experiential learning-based environmental education can be tailored to the ecological, social, cultural, and economic conditions of learners or communities as learning subjects. For example, research by Zocher and Hougham (2020) highlights that contemporary environmental education often focuses solely on the biophysical environment—such as land and water—through rural community approaches, particularly in areas that are subject to natural resource exploitation. Consequently, the sustainability of the environment becomes more tangible and easier to comprehend, as learners can directly relate the concepts studied to their lived experiences. In contrast, environmental issues arising from societal norms, cultural behaviors, and urban capitalist lifestyles tend to be overlooked (Payne, 2018). This oversight renders environmental education in urban communities more challenging to grasp. As a result, urban populations—who do not directly witness resource exploitation—often perceive environmental degradation as a distant or even fictitious concern. Therefore, experiential learning becomes essential in enabling all societal groups to experience the impacts of environmental damage firsthand and fostering collective efforts to address them.

Referring to the findings of Zocher and Hougham (2020) and Payne (2018), environmental education in urban communities should extend beyond the mere dissemination of ecological concepts; it must also integrate social and economic challenges faced by residents. One effective method involves organizing discussion forums that critically examine pressing societal issues, such as rising commodity prices, the prevalence of disease outbreaks, and increasing crime rates. This approach encourages communities to directly link environmental changes with their socioeconomic conditions. Environmental issues often seem detached from daily life, but integrating them into broader socioeconomic discussions fosters a more holistic understanding. For instance, rising staple food prices are not solely driven by global economic factors but also by climate change-induced prolonged droughts, soil contamination from excessive chemical fertilizer use, and fertilizer shortages due to raw material scarcity. Similarly, the spread of disease outbreaks may be linked to water pollution, pesticide-contaminated food consumption, and improper household waste management. Even increasing crime rates can be associated with economic hardship caused by food price inflation and high healthcare costs.

From a sustainable development perspective, addressing urban challenges aligns with the principles of social, economic, and environmental balance. When communities recognize the interconnectedness of environmental issues and their well-being, they are more likely to seek solutions that are not only economically beneficial but also environmentally sustainable. For example, to mitigate rising food prices, communities can adopt hydroponic farming methods to grow vegetables independently. This initiative not only reduces reliance on expensive, chemically treated food but also offers ecological benefits, such as increasing urban greenery that absorbs carbon dioxide, optimizing the use of limited land space, and minimizing the carbon footprint associated with food distribution.

Similarly, pollution-related disease outbreaks can be addressed through community-based waste management initiatives. Programs such as household waste sorting, composting organic waste, and recycling initiatives can help mitigate environmental pollution while raising public awareness of proper waste disposal. As collective awareness grows, its positive impact extends to various aspects of life, including improved public health and reduced crime rates due to increased economic opportunities in environmental entrepreneurship, such as recycling-based businesses and urban agriculture.

However, to ensure these changes occur systematically and sustainably, a more structured educational approach is required. One strategic step is to integrate environmental issues into school curricula. Environmental education should not be confined to science or geography subjects but should be incorporated across multiple disciplines, including economics, sociology, and even civic education. By doing so, students can understand the linkages between environmental conditions and the social and economic challenges they encounter in everyday life.

Furthermore, experiential learning can be effectively applied in environmental education to deepen students' understanding. This method enables learners to engage in hands-on learning experiences, such as visits to recycling centers, school garden projects, and climate change impact simulations on the local economy. Through these activities, students not only acquire theoretical knowledge but also develop practical skills and a comprehensive understanding of how environmental solutions can be implemented in daily life. Experiential learning can also be extended to urban communities through action-based programs. For instance, the "Green Village" initiative encourages residents to plant greenery in their yards, recycle waste, and reduce single-use plastics. Such programs not only enhance environmental quality but also strengthen social cohesion among residents and create new economic opportunities through improved waste management and local food production.

Multi-stakeholder collaboration plays a crucial role in expanding the reach and effectiveness of environmental awareness efforts. Partnerships among government agencies, educational institutions, non-governmental organizations, businesses, and local communities can enhance the impact of environmental initiatives. Continuous monitoring and impact assessment are also essential to evaluate the effectiveness of these programs and identify areas for improvement. Thoughtful planning and execution of environmental awareness campaigns are crucial to achieving sustainable and long-term outcomes. By actively involving communities and providing consistent support, environmental consciousness can be heightened, ultimately empowering society to take concrete action in protecting and preserving the environment.

CONCLUSION

The massive social movements of the 1960s and 1970s were not limited to political, racial, economic, and gender issues but also extended to environmental concerns. During this period, awareness of the exploitation of natural resources by capitalists increased, along with its impact on social, economic, and political inequalities. The environmental movement emerged as a form of resistance against such exploitation, aiming to curb environmentally destructive practices and address social injustices. The pressure exerted by environmental groups eventually led the international community to address these concerns in various high-level forums and conferences.

Through these international forums, the concept of sustainable development emerged, striving to balance economic growth, social well-being, and environmental preservation. One significant implication of this development was the integration of environmental education into school curricula. This education was expected to serve as a primary instrument in fostering public awareness of the importance of environmental conservation. However, over time, environmental education became confined within academic circles, primarily engaging students, scholars, and intellectuals. Consequently, it has generated more conceptual discourse than tangible action in the field. This phenomenon has caused environmental education to lose its ideological and historical roots, which emphasize environmental protection through active community involvement.

The imbalance between theory and practice has led many environmental programs to stagnate. To address this issue, environmental education must be redirected towards a more inclusive and action-oriented framework. Within the paradigm of ecopedagogy, environmental education should not only focus on raising awareness but also encourage collective action involving various stakeholders within society. Therefore, an experiential learning-based approach should be implemented as a key strategy for internalizing environmental consciousness. This approach enables individuals to learn through direct experience, allowing them not only to understand theoretical concepts but also to perceive firsthand the impacts of human behavior on the environment.

The praxis of experiential learning-based environmental education can be applied by designing programs tailored to the social, economic, and environmental conditions of a given area. For instance, in urban areas facing issues such as air pollution and high energy consumption, initiatives such as training on renewable energy usage or eco-friendly transportation systems could be introduced. Meanwhile, in rural areas reliant on agriculture, environmental education can focus on sustainable farming practices that minimize the use of chemical fertilizers and pesticides. This approach ensures that communities are not only provided with theoretical knowledge about environmental conservation but are also actively involved in identifying and implementing practical solutions relevant to their specific contexts.

The success of experiential learning-based programs relies not only on community participation but also on collaboration among various stakeholders, including governments, the private sector, and educational institutions. Governments can play a crucial role by providing regulations, funding, and infrastructure to support environmental education. Educational institutions, on the other hand, are responsible for designing curricula that are more application-oriented and experiential, allowing students to gain a deeper understanding of the connection between theory and practice. Furthermore, periodic evaluations of the effectiveness of experiential learning-based environmental education programs are essential. These evaluations should assess the programs' impact on individual and community behavior change and their contribution to tangible environmental improvements. Additionally, teaching methods must continuously evolve to remain relevant to the ever-changing environmental challenges. For example, digital technology and social media can serve as effective tools for disseminating information and fostering a broader environmental movement.

By integrating experiential learning into environmental education, society can become more actively engaged in environmental conservation efforts. Beyond merely understanding theoretical concepts, individuals will develop a deeper awareness as

they directly experience the consequences of their actions on the environment. This experiential approach to environmental education will also help cultivate a generation that is more responsible toward ecosystems and sustainable development.

Ultimately, environmental education must reach all segments of society, not just academics and students. By prioritizing a more inclusive and application-oriented approach, we can foster a society that is not only environmentally conscious but also capable of collective action in ensuring the sustainability of our planet. The integration of experiential learning into environmental education represents a strategic step toward driving meaningful changes in societal attitudes and behaviors toward environmental preservation.

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