



THE ROLE OF EDUCATION IN CULTIVATING ENVIRONMENTAL RESPONSIBILITY AMONG FUTURE GENERATIONS

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RESEARCH ARTICLE



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Abstract

Education plays an impactful role in developing sense of responsibility towards sustainable future. Through this nature contact education peoples can relate their daily living environmental issues to future and able to eradicate the bad impacts on the environment for the sustainable development. Environmental education can create a bridge between theoretical and practical implementation of environment issues related actions. In this study the researcher tries to investigate the role of education in cultivating environmental responsibility among future generations. For this purpose, researcher critically analysed and reviewed various secondary sources like – Various published research reports of government organizations and various environmental education related textbooks etc. The result revealed that environmental education can increases awareness regarding environmental issues. Also generate a basic understand about environment and helps to understand the relationship between nature and human. This study also revealed that various empirical learning approaches like- Experiential learning approach, Inquiry based learning approach, Field based learning approach & Problem based learning approaches can shape responsible environmental behaviour of the students. The study concludes that, the role of nature contact environmental education is very important in advancing environmental responsibility from present to future generations, and it may possible to build a sustainable future for the future generation through various learning approaches.

Keywords: *Environmental education, Environmental responsibility, Sustainable future, Nature contact environmental education*

Introduction

Currently, a large number of environmental changes can be noticed throughout the world. Which are mainly, closely related to human activities. People may become the causes of the increasing of the degradation of natural resources, deforestation, climate change, pollution, etc. directly or indirectly through various activities in their daily lives (Dijoo & Khurshid, 2022; Driga & Drigas, 2019). Combining all these reasons, it can be said that the lack of environmental education is one of the main reasons for environmental degradation. Environmental education can increase environmental concerns between individuals and society. This environmental education can also help in the sustainable development of society (Yadav et al., 2022). Environmental education stimulates the attitude and responsible behaviour of individuals, which results in develop responsibility among individuals regarding environmental problems (Hsu, 2004; Zsóka et al., 2013). This environmental responsibility is not something that is created automatically or the growing of civic sense may help us to build a better-balanced society. Environmental responsibility will be formed by shaping environmental awareness, environmental attitudes and pro-environmental behaviour among individual through education (Goldman et al., 2020; Janmaimool & Khajohnmanee, 2019). Shruti & Chandrashekar (2025) stated that, environmental education helps in creating values, perceptions and awareness in human society in a super-imaginative way to handle the environmental challenges that may come in the present as well as in the future. Environmental education stimulates the awareness and pro-environmental behaviour of individual and also develop their critical thinking and environmental problem-solving capabilities (Agbor et al., 2025; Nath, 2024). As a results, individuals are facilitated in finding environmental problems and choosing appropriate solutions to them. Also, through environmental education, people are able to understand their own relationship with society and the natural world (Bonnett, 2007). People can tackle environmental related problems by integrating environmental education in their daily lives. Basically, to increase environmental responsibility among people, along with all this, we need to know the importance of environmental education in increasing awareness about environment related issues and along with it, what kind of role do teachers and educational institutions have in solving current and future environmental problems. Through which, how will environmental responsibility

increase among people. Also, what kind of learning approach can be used to develop pro environmental behaviour among students, all these have been discussed in this study that how can environment awareness, responsibility and positive environment and eco-friendly behaviour be created among the current and future generations.

Reviewed literature

Bhattacharya, H. P. (2025) highlighted that sustainable development is not possible without environmental education. Therefore, environmental education should not be made a single subject but should be made inter-disciplinary. And this principle should be applied in research-based and higher education as well. As a result, the trend of sustainable development will continue. Bhattacharya also said that environmental education is an important agent for shaping future sustainable development. Akinsemolu, A. A., & Onyeaka, H. (2025) argue that the green education can help to achieve the goals of sustainable development through societal and behavioural changes, and all of this led to awareness of climate change. Patil, S., & Das, A. (2024) stated that the environmental education shaped the attitude of young people regarding environmental issues such as drought, man-made floods, water shortages, global warming etc. When environmental education includes into the school curriculum, students are getting more aware about various environmental problems. Environmental education include into curriculum is a way to help students to acquire skills and develop competencies to help them to achieve a sustainable future. Nath, S. (2024) explored the “role of education in developing environmental awareness”. Nath stated that in order to make future more developmental and to create awareness about environmental issues among future generations, the curriculum that is prepared for school education should include topics such as how to maintain environmental balance, how sustainable development can happen, how to protect ecosystems. In addition, strong and inclusive environmental education is essential to build a sustainable future. Vladova, I. (2023) conducted a study on “Towards a More Sustainable Future: The Importance of Environmental Education in Developing Attitudes towards Environmental Protection”. In this study ‘Vladova’ suggest that by incorporating environmental education into the current education system, it is possible to change people’s attitudes, thereby developing environmental protection behaviour among people and ensuring sustainable development. Patra, B., & Bhoi, C. (2025) conducted a study on “Nurturing green minds: The role of education in environmental conservation”. This study revealed that education is not just for getting a degree, but a powerful means to sustain the earth. The path to environmental protection starts from school, and from there it is possible to change the future. It is said again that environmental education is not possible with technology or environmental protection laws, it will be possible by increasing awareness about environmental issues in the classroom. Awareness will increase through tree plantation, field visit, recycling etc. It is also said that environmental education should be kept as a core part of the curriculum and not as an optional. By reviewing the above-mentioned studies and many other studies, it can be concluded that our main focus of matter will be how sustainable development will come to exist, how environmental awareness will increase, how attitude will change, in which way people may follow some short of methods for the above purposes, but no study has given such significant importance to conveying environmental responsibility to future generations through education. Therefore, the researchers may come to the conclusion to focus their views to investigate the above points in this article.

Objectives of the study

- 1) To examine the importance of environmental education in increasing awareness about environmental issues.
- 2) To assess the effects of empirical learning approaches on shaping responsible environmental behaviour.

Methodology of the study

This research was complete through review of various published articles in various national and international journal which is related to environmental education. Although, Various published research reports of government organizations and various environmental education related textbooks are critically analysed and reviewed by the researchers for full fill the purposes of this research. Finally, it can be said that this research was conducted through a review of various secondary sources.

Discussion pertaining to the Objectives- 1

Importance of environmental education in increasing awareness about environmental issues

1] Build basic understanding about environment: Environmental education plays a pivotal role to develop basic understanding regarding environment. By incorporating environmental education into the curriculum from the primary level, students can able to understand the environment and environmental issues from the beginning of their educational lives (Kimaryo, 2011). As a result, responsibility towards the environment is created among the students from an early age. Through environmental education, students will understand how ecosystem works, how the climate system works, and how everything is closely connected to the environment (Hnatyuk et al., 2024). In addition, through environmental education, students can able to understand the natural processes of the environment and identify the reasons why these natural processes of the environment. Environmental education also creates an attitude of protecting the environment among students.

2] Develop critical thinking skills: Environmental education not only cater knowledge regarding climate change and environmental issues but also generate skills related to critical thinking (Ernst & Monroe, 2004). Through environmental education, students engage in critical thinking in various ways to solve environmental problems. Critical thinking skills are essential for solving environmental problems such as drought, ecosystem change, water pollution, soil pollution, etc. Environmental education plays a special role in developing these skills to solve problems related to environmental degradation.

Through environmental education, it is possible to develop the skills of finding not just one solution to environmental problems, but also how to find multiple solution to a problem. Also, through this critical thinking, environmental responsibility can be developed among students, which will result in the development of a sustainable future (Minott et al., 2019).

3] Awareness encouragement: It is possible to increase awareness through environmental education. Basically, by integrating various topics related to environmental education in the curriculum of mainstream of education, students' awareness about environmental issues was develops (Kimiti & Cheruto, 2013). In addition to including environmental education into the curriculum, also inclusive strategies should be followed in the classroom to increase awareness (Loskota, 2004). Students should be given the opportunity of hand- on experience to develop environmental knowledge within the curriculum (Hopkinson et al., 2008). It is also possible to increase students' awareness about environmental issues through technology-based teaching and learning systems and comprehensive strategies (Husamah et al., 2025). Research projects, Community involvement also work as important factors, through which students' attitudes and environmental behaviour can be shaped, which in turn encourages students' environmental awareness (Gupta et al., 2024).

4] Create sustainable practices: Sustainable practices or development is one of the significant outcomes of environmental education. Through these environmental education students can learn about the impactful negative and harmful effects of use of plastics in our daily lives. As a result, sustainable awareness and sustainable habits can be developed in students. They may start carrying reusable bags, bottles instead of plastics. Although students can learn the responsible use of natural resources through the environmental education (Rickinson, 2001). When students are known about various wastage of natural resources, they start to preserved the natural resources (Berlik et al., 2002). Through recycling programs in schools and colleges, students can gain hand-on experience about the use of natural resources (Friman et al., 2018). Also buying eco-friendly products, travelling, and management of waste are essential factor to preserved the natural resources (Udodiugwu et al., 2025; Sushchenko et al., 2018).

5] Strengthening eco-friendly values: By strengthening eco-friendly values, environmental responsibility can be generated among the present generation. If environmental responsibility is created among the present generation, a sustainable future will be created for the future generations (Emina, 2021). To instil eco- friendly values among the students, they should be made aware of various water management strategies, waste management strategies, electric conserve etc. in the school and home environment. As a result, students can effectively use all those strategies in real life conserve water. Also, students should develop environmentally responsible habits such as recycling, waste management, preservation of natural resources, etc. Special attention should be paid to eco-friendly farming practices such as organic farming. Keeping in mind the damage to the environment, special emphasis should be placed on eco-friendly technology so that it becomes possible to generate eco-friendly values using eco-friendly technology (Jaiswal & Mojahid, 2020).

6] Promote pro-environmental behaviour: Pro-environmental behaviour can be developed through the integration of environmental education in the field of education (Zárate Rueda et al., 2023). Zsóka et al., (2013) revealed that through pro-environmental behaviour, students can consciously minimize environmental degradation through various actions such as waste management, energy conservation, recycling, etc. As a result, a sustainable future is created for future generations. This pro-environmental behaviour creates an attitude among students to prevent the loss of natural resources (Nepras et al., 2023). This pro-environmental behaviour can also be stimulated through experiential learning, hands-on activities.

7] Cultivate sense of responsibility regarding environment: Conservation of natural resources is a responsible duty for the present and future generations. To fulfil this duty in the right way, one must have knowledge about the environment. Through environmental education knowledge and awareness about the environment increases among students (Aminrad et al., 2013). If responsibility towards the environment increases, interest in solving environmental problems also increases. Letcher, (2020) mentioned that, if people are responsible for the environment, they can understand how mush various environmentally harmful works such as plastic use, electric waste, etc. are harming the environment and what their impact may be in future life.

8] Create capabilities to solve environmental issues: Environmental education helps students develop their problem-solving capabilities. Hudson, (2001) stated that the education gained through environmental education, it becomes easier to find solutions to various environmental problems such as waste of natural resources, climate change, etc.

9] Build knowledge on human and nature relationship: Environmental education helps to understand the close relationship between humans and the environment. It helps people to understand that humans are not separate from the environment and humans are a part of the environment (Stapp, 1969). Environmental education makes it possible to develop eco-friendly behaviour in people. Environmental education helps people

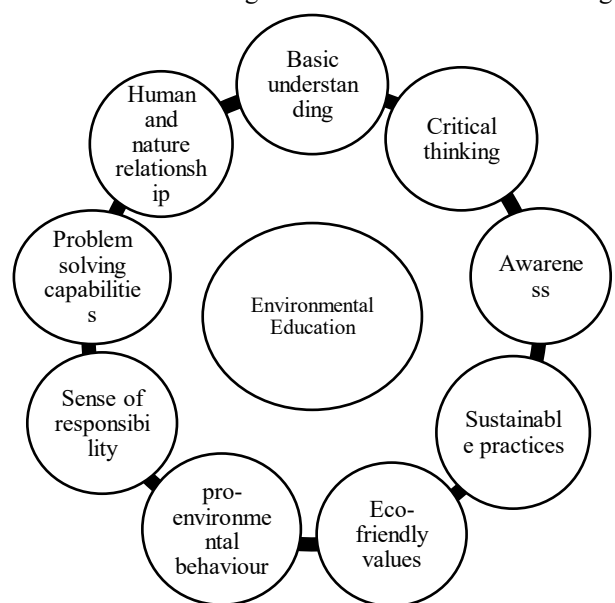


Fig. 1 Importance of environmental education: Summary Diagram

analyse their relationship with the environment, which in turn creates a sense of responsibility to preserve nature in people (Simmons, 1991). Therefore, it can be said that environmental education teaches people to preserve natural resources for the present and future generations.

Discussion pertaining to the Objectives- 2

Effects of empirical learning approaches on shaping responsible environmental behaviour

Experiential learning approach

- Experiential learning approach is an approach where students face real problems through learning by doing (Bradberry & De Maio, 2019). Facing these problems and finding solutions to them through learning by doing. This approach makes it possible to increase personal responsibility among the current generation.
- This approach builds a bridge between knowledge and action. This approach teaches not only theoretical knowledge but also practical application.
- Experiential learning approaches help individuals to understand environment-related issues. This approach not only helps individuals understand the problems but also teaches them to think critically about those problems (Kirschner et al., 2006).
- This approach can build confidence among individuals and develop motivation for future generations on how to preserve the environment (Higgins, 2009).
- This approach helps people to repeat eco-friendly actions such as energy conservation, waste management, electricity saves etc (Altassan, 2023).

Inquiry based learning approach

- Through this inquiry-based learning approach learner can learn or acquire knowledge by asking (Ismail et al., 2006). Inquiry based approach is that type of approach where students try to investigate regarding problems and revealed the actual solution of the problem (Acar & Tuncdogan, 2019). This approach is a student's-oriented approach.
- Inquiry-based approaches allow students to learn by investigating something. This approach can promote individual thinking about environment-related issues.
- This approach increases awareness among students about environmental issues such as plastic pollution, water pollution, soil pollution, waste management related issues, climate change, degradation of natural resources, etc (Mihai et al., 2021). and increases environmental responsibility.
- By adopting this approach, students can collect data about environment related issues, observe and analyse that data and arrive at solutions to environment related issues (Shareef, 2010).

Problem based learning approach

- The problem-based learning approach enables students to become aware of practical and daily life environmental problems by providing them with environment-related practical problems (Fettahlioğlu & Aydoğdu, 2020).
- Students develop problem-solving and decision-making skills as they encounter real environmental problems.
- This interactive learning creates a positive attitude among students towards environmental conservation. As a result, they start taking small environmentally friendly actions such as using less plastic, not wasting electricity, not wasting water, etc. These actions will result in positive environmental changes (Akande, 2023).
- Skills like teamwork, collaborative nature friendly thinking, etc. are developed through this approach (Nurwidodo et al., 2024).

Field based learning approach

- ✓ With this approach, students get the opportunity to come into contact with nature and understand nature related issues (Fedesco et al., 2020).
- ✓ This approach can be used to observe the impact of nature contact environment education among students, which results in positive attitudes and responsible behaviour towards nature among students (Pirchio et al., 2021).
- ✓ When students learn through nature contact education, they can witness environmental damages and respond to resolve these damages or engage in environmentally friendly behaviour (Hungerford & Volk, 1990).

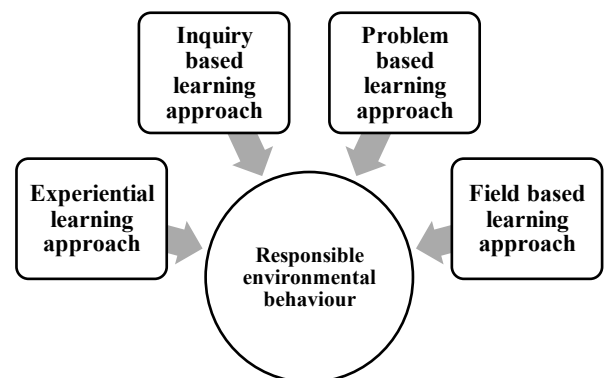


Fig. 2 Effects of empirical learning approaches: Summary Diagram

Summary and Conclusion

Environmental education is a significant tool for increasing the environment related awareness and environmental responsibility of nowadays generation. Through this increased awareness, a sustainable future can be built. Environmental education also plays an important role in developing basic understanding of the environment and develop critical thinking skills in the present generation. In addition, the role of environmental education is very important in increasing awareness related various environmental issues such as developing sustainable practices, promoting sustainable pro-environmental behaviour etc. to build

a sustainable future. Not only that this nature related education also plays a significant role in developing knowledge about the relation between humans and nature. Through all these things, it will become possible to develop a sustainable future for the future generation. Although, there is a wide range of learning approaches that can be used to enhance students' environmental responsibility. It can be said that experimental learning approach can help to develop inquiry -based behaviours in students, which will lead them to find solutions to environmental issues. In addition, various types of learning approaches such as inquiry-based learning approach, problem -based learning approach, field-based learning approach also influence the environmentally responsible behaviour of students. After receiving education in all these learning approaches, eco- friendly behaviour is developed among students. Students come forward to prevent activities that harm the environment in the society. A positive attitude is created among students about the conservation of the environment. Through all these learning approaches, students learn to think about environment related practical issues. And students take initiative to conserve natural resources for the next generation.

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