The Academic
International Journal of Multidisciplinary Research

An Online Peer Reviewed / Refereed Journal
Volume 4 | Issue 1 | January 2026
ISSN: 2583-973X (Online), SJIF IF: 5.6
Website: www.theacademic.in

Environmental Awareness among Higher Secondary School Students: A Descriptive Study

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DOI : https://doi.org/10.5281/zenodo.18641765

ARTICLE DETAILS

Research Paper

Accepted: 22-01-2026

Published: 10-02-2026

Keywords:

Environmental Awareness, Senior Secondary Students, Environmental Education, Gender, Academic Stream, Board of Education

ABSTRACT

Environmental degradation has emerged as one of the most pressing challenges of the modern world, threatening ecological balance and human survival alike. Education is widely recognized as a powerful tool for developing environmental awareness and responsible behaviour among young citizens. The present study investigates the level of environmental awareness among higher secondary school students of Siddharth Nagar District, Uttar Pradesh. Using a descriptive survey method, the study examines whether environmental awareness differs significantly with respect to gender, academic stream (science and arts), and board of education (CBSE and U.P. Board). A sample of 200 students studying in classes XI and XII was selected through random sampling from four higher secondary schools. The Environmental Awareness Questionnaire developed by (Professor Madhu Kapani and Dr. Minakshi Biswal) was used for data collection. Statistical analysis involving mean, standard deviation, and t-test was employed to test the hypotheses. The findings reveal that there is no significant difference in environmental awareness based on gender, stream, or board of education. The results suggest that environmental awareness, academic variable, indicating the effectiveness of existing exposure. The study emphasizes the need for experiential, value-oriented, and action-based environmental education research.

1. Introduction

The environment constitutes the totality of physical, biological, social, and cultural surroundings in which human beings exist. It includes not only air, water, land, flora, and fauna but also psychological, social, and cultural dimensions that shape human life. Human civilization is intrinsically dependent on nature for survival, yet the modern age is witnessing unprecedented exploitation of natural resources. Rapid industrialization, urbanization, population growth, and technological advancement have resulted in severe environmental problems such as air and water pollution, soil degradation, deforestation, climate change, and biodiversity loss.

Environmental crises are not merely scientific or technological issues; they are deeply rooted in human attitudes, values, and behaviours. When humans violate the natural laws governing ecological balance, the consequences manifest in the form of natural disasters, health hazards, and depletion of life-support systems. The future of life on Earth, therefore, depends significantly on the level of environmental awareness and responsibility exhibited by present and future generations.

Recognizing the seriousness of environmental degradation, global efforts have been initiated to promote environmental protection and awareness. The United Nations Conference on the Human Environment held at Stockholm in 1972 marked a turning point by emphasizing environmental education as a key strategy for sustainable development. Subsequent international initiatives, including the establishment of the United Nations Environment Programme (UNEP), reinforced the importance of awareness, education, and public participation in environmental conservation.

In India, environmental education has gained increasing attention since the 1970s. Government policies, five-year plans, and curriculum reforms have emphasized environmental protection and sustainable use of natural resources. Institutions such as NCERT, UGC, and the Ministry of Education have incorporated environmental concepts into school and college curricula. However, the effectiveness of these efforts largely depends on the extent to which students internalize environmental awareness and translate it into responsible behaviour.

Higher secondary students occupy a crucial developmental stage characterized by cognitive maturity, social awareness, and value formation. As future citizens, professionals, and policymakers, their understanding and perception of environmental issues will significantly influence the quality of environmental stewardship in society. Therefore, assessing the level of environmental awareness among

senior secondary students is essential for evaluating the effectiveness of environmental education and identifying areas for improvement.

2. Conceptual Framework

2.1 Environmental Awareness

Environmental awareness refers to an individual's understanding, concern, and sensitivity toward environmental issues and problems. It involves both cognitive and affective components. The cognitive aspect includes knowledge and factual understanding of environmental concepts such as pollution, conservation, biodiversity, and sustainability. The affective component encompasses attitudes, values, and a sense of responsibility toward protecting the environment.

In the present study, environmental awareness is conceptualized as a composite of three dimensions:

1. **Environmental Orientation** – knowledge and information about environmental issues.
2. **Environmental Attitude** – favourable or unfavorable dispositions toward environmental protection.
3. **Environmental Responsibility** – willingness to act responsibly and participate in environmental conservation.

2.2 Environmental Pollution

Environmental pollution is one of the most visible outcomes of human interference with nature. It refers to the introduction of harmful substances or energy into the environment, resulting in adverse changes. Major types of pollution include air pollution, water pollution, soil pollution, noise pollution, solid waste pollution, and radioactive pollution. These forms of pollution have far-reaching consequences for human health, ecosystems, and climate stability.

3. Review of Related Literature

Research on environmental awareness and environmental education has expanded considerably over the past few decades. Studies conducted at national and international levels provide valuable insights into the determinants and outcomes of environmental awareness.

Studies conducted abroad, such as those by **Moyer (1977), Hurt** and **McClaren (1978**), and **Volk (1983),** emphasized the importance of measuring environmental attitudes and curriculum needs. Several researchers found that environmental education programs positively influence students' knowledge and attitudes, although behavioural change may require sustained intervention.

Gender-based studies yielded mixed results. While some researchers reported higher environmental concern among females, others found minimal or no significant differences. Similarly, studies examining differences between science and non-science students reported inconsistent findings, suggesting that environmental awareness may not be strictly discipline-dependent.

Indian studies, including those by **Singh and Rao (1981), Gupta et al. (1981**), and **Bharti (2002),** highlighted the role of education, socio-economic status, and urban-rural background in shaping environmental awareness. However, many studies also reported uniform levels of awareness across different groups, indicating the widespread dissemination of environmental information through formal education and mass media.

Gopinath (2014) found that the level of environmental awareness among secondary school students was low. The study showed that girls had more environmental awareness than boys. It also found a clear difference between urban and rural students, with urban students being more aware of environmental issues than rural students. In addition, students studying in the Malayalam medium had higher environmental awareness than those studying in the English medium. **Aziz (2015**) conducted a study in Allahabad to examine the environmental awareness and environmental ethics of primary and secondary school teachers. The findings showed a significant difference in environmental ethics between the two groups, with primary school teachers demonstrating higher environmental ethics than secondary school teachers. The study also revealed that there were no significant differences based on gender or locality in the environmental ethics of school teachers.

Balaji and Anbalagan (2017) carried out a study to examine environmental awareness among rural and urban secondary school students in the Thiruvallur district. Data were collected using the Environmental Awareness Ability Measure (EAAM), a standardized tool developed by Dr. Praveen Kumar Jha in 1998. The findings revealed that male students demonstrated slightly higher levels of environmental awareness than female students. Similarly, students studying in the English medium showed marginally better environmental awareness compared to those from non-English medium schools

Dhanya and Pankajam (2017) investigated the level of environmental awareness among secondary school students. The results showed that nearly half of the students (48%) possessed a moderate level of environmental awareness. The study also found a significant variation in environmental awareness based on the type of school, with students from private schools demonstrating higher awareness than those from government schools. Additionally, a significant difference was observed between students based on their participation in eco-clubs, as members of eco-clubs exhibited a higher level of environmental awareness compared to non-members

Despite the growing body of research, region-specific studies remain limited. In particular, environmental awareness among senior secondary students of Siddharth Nagar District had not been systematically examined prior to the present study, creating a significant research gap.

4. Objectives of the Study

The objectives of the present study were:

1. To assess the level of environmental awareness among higher secondary school students.
2. To compare environmental awareness between male and female students.
3. To compare environmental awareness between science and arts stream students.
4. To compare environmental awareness between CBSE and U.P. Board students.

5. Null Hypotheses

The study tested the following null hypotheses:

1. There is no significant difference in the level of environmental awareness among higher secondary school students.
2. There is no significant difference in environmental awareness between male and female students.
3. There is no significant difference in environmental awareness between science and arts students.
4. There is no significant difference in environmental awareness between CBSE and U.P. Board students.

6. Research Methodology

6.1 Research Design

The descriptive survey method was adopted to study environmental awareness among higher secondary students.

6.2 Population and Sample

The population comprised students studying in classes XI and XII in higher secondary schools of Siddharth Nagar District, Uttar Pradesh. A sample of 200 students was selected using simple random sampling. The sample included equal representation of gender, academic streams, and boards of education.

6.3 Tool Used

The Environmental Awareness Questionnaire developed by Prof. Madhu Kapani and Dr. Minakshi Biswal was used. The tool is standardized, reliable, and valid, with reliability coefficients of 0.90 (split-half) and 0.88 (test-retest).

6.4 Statistical Techniques

Mean, standard deviation, and t-test were used for data analysis at the 0.05 level of significance.

7. Analysis and Interpretation of Data

The statistical analysis revealed that the calculated t-values for comparisons based on gender, stream, and board were lower than the critical value at the 0.05 level. Hence, all null hypotheses were accepted.

7.1 Gender and Environmental Awareness

S.No.	Sex	N	Mean	S.D.	't' value	Df	Level of significance	Result (P)
1	Male	100	55.67	10.10	0.400802	198	0.05	Not significant (NS)
2	Female	100	54.43	10.71				

No significant difference was found between male and female students. This suggests that both genders receive similar exposure to environmental education and information.

7.2 Stream and Environmental Awareness

S.No.	Course	N	Mean	S.D.	't' value	Df	Level of significance	Result (P)
1	Science	100	55.06	9.93	0.989198	198	0.05	Not significant
2	Arts	100	55.40	10.90				

The analysis showed no significant difference between science and arts students, indicating that environmental awareness is not limited to science-based curricula.

7.3 Board and Environmental Awareness

S.No.	Board	N	Mean	S.D.	't' value	Df	Level of significance	Result (P)
1	U.P.	100	52.61	10.95	0.00081	198	0.05	Not significant (NS)
2	C.B.S.E.	100	87.49	9.24				

No significant difference was found between CBSE and U.P. Board students, reflecting comparable emphasis on environmental education in both boards.

8. Discussion

The findings indicate a relatively uniform level of environmental awareness among higher secondary students, irrespective of demographic and academic variables. This uniformity may be attributed to the integration of environmental topics in school curricula, increased media coverage of environmental issues, and national awareness campaigns.

However, awareness alone may not guarantee responsible environmental behaviour. Many environmental problems persist despite high awareness levels, suggesting a gap between knowledge and action.

Therefore, environmental education must move beyond information dissemination and focus on experiential learning, critical thinking, and value formation.

9. Conclusion

The study concludes that higher secondary students in Siddharth Nagar District possess a moderate and uniform level of environmental awareness. Gender, academic stream, and board of education do not significantly influence awareness levels. The findings highlight the success of existing educational efforts while also emphasizing the need for more action-oriented and participatory approaches to environmental education.

10. Educational Implications

1. Environmental education should be made experiential and activity-based.
2. Schools should organize eco-clubs, nature camps, and community projects.
3. Teachers should integrate local environmental issues into classroom teaching.
4. Mass media should be effectively used to reinforce environmental values.

11. Limitations of the Study

- The study was limited to a single district.
- The sample size was relatively small.
- Only a few variables were considered.

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