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The Role of Environmental Education in Promoting Sustainable Behavior among Secondary School Students: An Empirical Study

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Abstract

Environmental degradation and climate change demand urgent behavioral changes, especially among the youth. Environmental education plays a critical role in equipping students with knowledge, attitudes, and practices for sustainability. This study investigates the impact of environmental education on sustainable behavior among secondary school students. A survey of 250 students across rural and urban schools in Andhra Pradesh was conducted. The study found a positive correlation between environmental knowledge and pro-environmental actions. However, gaps were observed in behavioral practices despite awareness. The findings highlight the need for experiential, community-based, and curriculum-integrated environmental education. Recommendations include project-based learning, teacher training, and policy-level support for green school initiatives.

Keywords: Environmental education, sustainable behavior, climate literacy, secondary schools.

1.INTRODUCTION

Environmental challenges such as climate change, pollution, biodiversity loss, and deforestation have intensified the need for sustainable development. At the heart of sustainable development lies education—particularly environmental education (EE)—which fosters understanding, critical thinking, and responsible behavior. As young people will inherit the planet, nurturing environmental responsibility in schools is essential.

The National Education Policy (2020) of India emphasizes environmental awareness, yet there is a lack of practical, experiential learning. This study explores the role of

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EE in shaping students' environmental behavior and investigates the gap between awareness and action among secondary school students.

II.RESEARCH PROBLEM / QUESTION

Research Question:

To what extent does environmental education influence sustainable behavior among secondary school students, and what are the barriers to translating awareness into action?

I.THEORETICAL FRAMEWORK

The study is grounded in the Theory of Planned Behavior (Ajzen, 1991), which explains how attitudes, subjective norms, and perceived behavioral control influence individual behavior. In the context of environmental education, knowledge (attitude), peer and teacher influence (norms), and skill confidence (control) determine whether students adopt eco-friendly habits.

Another framework used is Experiential Learning Theory (Kolb, 1984), which posits that real-world, hands-on learning reinforces cognitive understanding, especially critical for environmental concepts.

II.LITERATURE REVIEW

Several studies have validated the connection between environmental education and sustainable practices. For instance, Ardoin et al. (2020) demonstrated that students involved in experiential environmental learning displayed greater ecological concern and stewardship.

Palmer and Neal (1994) emphasized the importance of linking curriculum content with local environmental issues to enhance relevance and engagement. In India, Sharma and Kumar (2021) found that students with exposure to nature-based projects demonstrated a higher tendency toward recycling, energy conservation, and biodiversity protection.

However, Kollmuss and Agyeman (2002) argue that knowledge alone does not guarantee action—emotions, habits, and social pressures also play roles. This complexity necessitates a multifaceted EE approach.

III.METHODOLOGY

Research Design: Quantitative and Descriptive

Sampling Method: Stratified Random Sampling

Sample Size: 250 students (aged 13–16)

Location: 5 schools in Eluru and West Godavari Districts, Andhra Pradesh (3 rural, 2 urban)

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Tools Used: Structured questionnaire with Likert-scale items covering:
Environmental knowledge, Attitudes toward sustainability, Behavioral practices (waste management, water use, etc.)
Data Analysis: Descriptive statistics, Pearson's correlation, and Chi-square tests using SPSS

DATA ANALYSIS

1.Environmental Awareness

82% of students correctly identified key causes of climate change.
65% understood the impact of pollution and deforestation.

2.Attitudes toward Environment

78% believed individuals can make a difference.
85% expressed interest in participating in eco-clubs or green initiatives.

3.Behavioral Practices

Only 52% consistently practiced waste segregation.
44% reported turning off lights/fans regularly to save energy.
Just 27% carried reusable bottles or bags.

4.Correlation Results

A moderate positive correlation ($r = 0.61$) was observed between awareness and sustainable behavior.. Rural students showed higher practical engagement due to involvement in community-based programs.

I.RESULTS

The findings confirm that while students are aware of environmental issues and show positive attitudes, this does not fully translate into sustainable behavior. Barriers include:
Lack of experiential learning in schools
Insufficient role models and peer reinforcement
Curriculum overload and exam pressure
Inadequate infrastructure (no recycling bins, school gardens)

II.SUGGESTIONS AND RECOMMENDATIONS

1.Integrate Environmental Education across Subjects: Use interdisciplinary approaches linking science, social studies, and language to sustainability themes.

1. Hands-on Learning: Introduce school gardens, eco-clubs, and community clean-up drives.
2. Teacher Training: Equip teachers with modern EE pedagogy through workshops and field experiences.

3. Policy Incentives: Mandate green certifications for schools and reward sustainable practices.
4. Student Involvement in Local Projects: Engage youth in water conservation, afforestation, and plastic-free campaigns.

CONCLUSION

Environmental education is a powerful tool to shape the attitudes and behaviors of young minds toward sustainability. However, a gap remains between knowledge and behavior. A concerted effort involving schools, communities, and policymakers is necessary to create an eco-conscious generation. Future research could explore longitudinal impacts of green school programs and the role of digital media in fostering eco-literacy.

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