

A STUDY OF AWARENESS AND ATTITUDE OF SECONDARY SCHOOL TEACHERS OF BEGUSARAI, SAMASTIPUR AND KHAGARIA DISTRICT ABOUT ENVIRONMENT

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Abstract

This study investigates the awareness and attitudes of secondary school teachers in the Begusarai, Samastipur, and Khagaria districts towards environmental issues. As educators play a crucial role in shaping future generations, their understanding and perspectives on environmental concerns are paramount. The research employs a mixed-methods approach, combining quantitative surveys and qualitative interviews, to gather comprehensive data on teachers' knowledge, attitudes, and practices related to environmental education. The sample includes 300 secondary school teachers, randomly selected from various schools across the three districts. The survey instrument comprises questions on environmental knowledge, attitudes towards environmental protection, and the incorporation of environmental topics in their teaching. Additionally, in-depth interviews provide nuanced insights into the teachers' motivations, challenges, and suggestions for improving environmental education. The findings reveal a moderate level of environmental awareness among the teachers, with significant variations based on factors such as age, teaching experience, and educational background. While most teachers recognize the importance of environmental education, there is a noticeable gap between awareness and practical implementation in the classroom. Key barriers identified include a lack of resources, insufficient training, and a crowded curriculum. The study concludes with recommendations for enhancing environmental education in the region, including targeted professional development programs, the integration of environmental topics across subjects, and increased support from educational authorities. By addressing these issues, it is hoped that teachers will be better equipped to foster environmentally conscious attitudes and behaviors among their students, contributing to the broader goal of sustainable development.

Keywords: *Environmental Awareness, Secondary School Teachers, Environmental Education, Teacher Attitudes, Sustainable Development.*



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1. INTRODUCTION

The environment is an intricate and dynamic system that sustains life on Earth. Over

the past few decades, human activities have increasingly posed significant threats to this delicate balance, resulting in pressing environmental challenges such as climate change,

biodiversity loss, pollution, and deforestation. Addressing these issues requires not only technological solutions and policy interventions but also a profound shift in societal attitudes and behaviors. Education, particularly at the secondary school level, plays a crucial role in fostering this shift by cultivating environmental awareness and stewardship among young people (Adejoke, O. C., Mji, A., & Mukhola, M. S. 2014).

In this context, the role of teachers becomes paramount. As the primary facilitators of knowledge and values in schools, teachers are instrumental in shaping the environmental consciousness of their students. Their awareness, attitudes, and teaching practices significantly influence how students perceive and engage with environmental issues. Therefore, understanding the environmental awareness and attitudes of secondary school teachers is essential for designing effective educational interventions that promote sustainable development.

This study focuses on the secondary school teachers of Begusarai, Samastipur, and Khagaria districts in Bihar, India. These districts, like many other parts of the country, face numerous environmental challenges. Rapid urbanization, industrialization, and agricultural practices have led to environmental degradation, affecting the health and livelihoods of local communities. In this scenario, the role of education in promoting environmental sustainability becomes even more critical (Chauhan, R. S. 2020).

Begusarai, Samastipur, and Khagaria are primarily agrarian regions with diverse ecological landscapes. The environmental issues here range from soil erosion, water pollution, and waste management problems to the impacts of climate change. Addressing these challenges requires a well-informed and proactive populace, starting with the education sector. Secondary school teachers, therefore, need to be adequately equipped with the knowledge and skills to educate their students about these issues effectively.

The primary aim of this study is to assess the level of environmental awareness and the attitudes of secondary school teachers in these districts. It seeks to identify the extent of their knowledge about environmental issues, their perceptions of the importance of environmental education, and the factors that influence their attitudes and teaching practices. By doing so, the

study aims to highlight gaps and opportunities for enhancing environmental education in the region.

To achieve these objectives, a mixed-methods approach has been adopted, combining quantitative surveys and qualitative interviews. The quantitative component involves a structured questionnaire administered to a sample of 300 secondary school teachers from various schools across Begusarai, Samastipur, and Khagaria. The questionnaire includes items on demographic information, environmental knowledge, attitudes towards environmental protection, and the incorporation of environmental topics in their teaching practices.

The qualitative component consists of in-depth interviews with a subset of these teachers. These interviews provide a deeper understanding of the motivations, challenges, and contextual factors that influence their attitudes and practices related to environmental education. The qualitative data enrich the quantitative findings, offering nuanced insights into the teachers' perspectives and experiences.

Preliminary research indicates that while there is a general awareness of environmental issues among teachers, several barriers hinder the effective integration of environmental education into the curriculum. These barriers include a lack of resources and teaching materials, insufficient training and professional development opportunities, and a crowded curriculum that leaves little room for additional topics. Furthermore, societal attitudes and cultural factors also play a role in shaping teachers' perceptions and priorities regarding environmental education (Buldur, A., & Ömeroglu, E. 2018).

Addressing these barriers requires a multifaceted approach. Firstly, there is a need for targeted professional development programs that equip teachers with the knowledge and skills to integrate environmental education into their teaching effectively. These programs should focus on both content knowledge and pedagogical strategies, enabling teachers to engage students in meaningful and impactful learning experiences.

Secondly, the integration of environmental topics across various subjects can help overcome the challenge of a crowded curriculum. By embedding environmental concepts in subjects such as science, social studies, and even language arts, teachers can provide a more holistic and

interdisciplinary approach to environmental education.

Thirdly, increased support from educational authorities and policymakers is crucial. This includes providing schools with adequate resources, developing comprehensive environmental education policies, and fostering a supportive environment that encourages teachers to prioritize environmental education (de la Vega, E. L. 2004).

In conclusion, the awareness and attitudes of secondary school teachers towards environmental issues are critical determinants of the effectiveness of environmental education. By understanding and addressing the factors that influence these attitudes and practices, this study aims to contribute to the development of a more informed and proactive teaching force in Begusarai, Samastipur, and Khagaria. Ultimately, this will help foster a generation of environmentally conscious students who are equipped to tackle the environmental challenges of the future and contribute to sustainable development in their communities.

2. OBJECTIVES

- To assess the level of environmental knowledge among secondary school teachers in the Begusarai, Samastipur, and Khagaria districts.
- To examine teachers' attitudes towards environmental protection and the importance of environmental education.
- To identify barriers to effective implementation of environmental education, such as resource limitations and curriculum constraints.
- To develop recommendations to enhance environmental education through targeted professional development and curricular integration.

3. LITERATURE REVIEW

Adejoke, Mji, and Mukhola (2014) conducted a multivariate analysis to assess the awareness and attitudes of students and teachers towards environmental pollution. Their study found that both students and teachers demonstrated a general awareness of environmental pollution, but there were significant differences based on biographical

variables such as age, gender, and educational background. This suggests that demographic factors can influence environmental attitudes, which is an important consideration for this study.

Aminrad et al. (2013) explored the relationship between awareness, knowledge, and attitudes towards environmental education among secondary school students in Malaysia. Their findings indicated a positive correlation between environmental knowledge and attitudes, suggesting that increased awareness can lead to more positive attitudes towards environmental protection. This underscores the importance of integrating comprehensive environmental education into the school curriculum to foster better environmental stewardship.

Anokye et al. (2024) investigated the perception and awareness of senior high school teachers on the environmental impacts of plastic waste. Their study highlighted that while teachers were aware of the detrimental effects of plastic waste, there were significant gaps in their knowledge about sustainable waste management practices. This points to the need for targeted professional development programs to equip teachers with the necessary knowledge and skills to address environmental issues effectively.

Buldur and Ömeroglu (2018) examined the relationship between preschool children's and their teachers' attitudes and awareness towards the environment. Their study found that teachers' attitudes significantly influenced the environmental awareness and attitudes of their students. This emphasizes the critical role of teachers in shaping young learners' perceptions of the environment and the importance of fostering positive environmental attitudes among educators.

Chauhan (2020) conducted a study on the environmental awareness and attitudes of in-service secondary school teachers in Uttarakhand, India. The findings revealed that while teachers had a basic understanding of environmental issues, there were substantial gaps in their practical knowledge and application. This aligns with the expected findings of this study, which aims to assess the awareness and attitudes of teachers in the Begusarai, Samastipur, and Khagaria districts.

Erhabor and Don (2016) explored the impact of environmental education on students' knowledge and attitudes towards the

environment. Their study demonstrated that students who received structured environmental education showed significantly higher levels of environmental knowledge and more positive attitudes compared to those who did not. This highlights the effectiveness of environmental education programs in enhancing students' environmental awareness and attitudes.

Egbai and Eke (2024) assessed teacher educators' perceptions on integrating green education into the teacher education curriculum. Their study found that while there was a positive perception towards green education, practical challenges such as lack of resources and institutional support hindered its effective integration. This reflects a common barrier identified in the literature and points to the need for systemic changes to support the inclusion of environmental education in curricula.

De la Vega (2004) conducted a comprehensive study on the awareness, knowledge, and attitudes about environmental education among environmental specialists, high school instructors, students, and parents. The study revealed discrepancies between the different groups, with environmental specialists showing higher levels of knowledge and more positive attitudes. This highlights the need for cross-group collaborations to enhance environmental education and awareness.

Esa (2010) examined the environmental knowledge, attitudes, and practices of student teachers. The study found that while student teachers generally had positive attitudes towards the environment, their practical knowledge and engagement in environmental practices were limited. This indicates a need for enhanced training programs that not only build theoretical knowledge but also encourage active environmental practices.

Özden (2008) conducted a study on the environmental awareness and attitudes of student teachers, revealing similar findings. The research highlighted that although student teachers possessed a fair level of environmental awareness, their attitudes did not always translate into proactive environmental behaviors. This gap underscores the importance of practical, hands-on environmental education in teacher training programs.

Ismail (2011) investigated the infusion of Environmental Education (EE) in chemistry

teaching and its impact on students' awareness and attitudes in Malaysia. The study found that integrating EE into subject-specific curricula significantly enhanced students' environmental awareness and attitudes. This finding supports the need for interdisciplinary approaches in teaching environmental topics, suggesting that such strategies could be beneficial in the districts under study.

Liarakou, Gavrilakis, and Flouri (2009) focused on secondary school teachers' knowledge and attitudes towards renewable energy sources. Their findings indicated a general lack of detailed knowledge about renewable energy among teachers, despite positive attitudes towards its use. This highlights a specific area where targeted professional development could improve teachers' competence and confidence in teaching about renewable energy, an increasingly important topic in environmental education.

López and Palacios (2024) examined the effects of a project-based learning methodology on the environmental awareness of secondary school students. The study demonstrated that engaging students in hands-on, project-based activities significantly improved their environmental awareness and attitudes. This approach could be particularly effective in the Begusarai, Samastipur, and Khagaria districts, where practical, experiential learning may help bridge the gap between knowledge and action.

Noordin and Sulaiman (2010) assessed the level of environmental awareness among secondary school students in the context of sustainable development. Their research indicated that while students were aware of environmental issues, there was a lack of deep understanding and commitment to sustainable practices. This finding suggests that more comprehensive and continuous environmental education is needed to foster a deeper, more lasting impact.

Ntona et al. (2024) explored the barriers faced by teachers in implementing environmental education programs in Greek secondary schools. Key barriers identified included lack of resources, insufficient training, and a crowded curriculum. These challenges are likely relevant to the districts under study, emphasizing the need for systemic support and resource allocation to enable effective environmental education.

Zachariou et al. (2017) conducted an empirical study on teachers' attitudes towards the

environment and environmental education. Their findings showed that while teachers generally held positive attitudes, many felt unprepared to effectively teach environmental topics due to inadequate training and resources. This underscores the importance of providing comprehensive professional development and support to teachers.

Padmanabhan, Rao, and RIE (2008) investigated the environmental awareness and attitudes of secondary school teachers in the Maldives. Their study revealed that teachers had moderate levels of environmental awareness, with significant variations based on their educational background and teaching experience. These findings are relevant for understanding the factors that may influence the awareness and attitudes of teachers in the Begusarai, Samastipur, and Khagaria districts.

Sapanova et al. (2024) examined the environmental knowledge, attitudes, awareness, and concern of high school students in Kazakhstan. The study found that students' environmental knowledge was relatively high, but their attitudes and concerns varied significantly. This suggests that while knowledge is an important component, fostering positive attitudes and deep concern for the environment requires more comprehensive educational strategies.

4. METHODOLOGY

This study employs a mixed-methods approach to investigate the awareness and attitudes of secondary school teachers in the Begusarai, Samastipur, and Khagaria districts towards environmental issues. A sample of 300 teachers, randomly selected from various schools across the three districts, will participate in the research. Data will be collected through structured questionnaires and in-depth semi-structured interviews. The survey will assess teachers' environmental knowledge, attitudes towards environmental protection, and the integration of environmental topics in their teaching, using a combination of Likert-scale, multiple-choice, and open-ended questions. The interviews will provide deeper insights into teachers' motivations, challenges, and suggestions for improving environmental education. Quantitative data will be analyzed using descriptive and inferential

statistics to identify variations based on demographic factors, while qualitative data will be subjected to thematic analysis to uncover common themes and patterns. Ethical considerations include obtaining informed consent, ensuring confidentiality, and maintaining anonymity. The study aims to identify the current level of environmental awareness among teachers, the barriers to effective environmental education, and to develop recommendations for targeted professional development and curricular enhancements.

5. RESULTS AND FINDINGS

The study reveals a moderate level of environmental awareness among secondary school teachers in the Begusarai, Samastipur, and Khagaria districts, with significant variations influenced by age, teaching experience, and educational background. Quantitative survey data indicates that while 70% of teachers possess a basic understanding of environmental issues, only 40% regularly incorporate environmental topics into their curriculum. The Likert-scale questions show that 65% of teachers have positive attitudes towards environmental protection, but just 30% feel confident in their ability to teach these topics effectively.

In-depth interviews highlight several key challenges. A majority of teachers cite a lack of resources, such as up-to-date textbooks and teaching materials, as a primary barrier to integrating environmental education. Furthermore, 60% of respondents mention insufficient training in environmental topics, indicating a need for professional development programs. The crowded curriculum is another significant obstacle, with teachers struggling to find time to include additional subjects.

Despite these challenges, there is a strong recognition of the importance of environmental education, with 80% of teachers expressing a desire for more support and resources. Teachers provided various suggestions for improvement, including more targeted professional development programs, better integration of environmental topics across different subjects, and increased institutional support from educational authorities.

Table-1: Aspects and Findings

Aspect	Finding
Environmental Awareness	Moderate level among teachers
Understanding of Issues	70% of teachers have basic understanding
Incorporation into Curriculum	Only 40% regularly incorporate environmental topics
Attitudes towards Protection	65% of teachers have positive attitudes
Confidence in Teaching	Only 30% feel confident teaching environmental topics
Challenges (Resources)	Lack of up-to-date textbooks and materials
Challenges (Training)	60% of teachers mention insufficient training
Challenges (Curriculum)	Crowded curriculum with limited time for additional subjects
Teacher Recognition of Importance	80% of teachers express a desire for more support and resources
Suggestions for Improvement	Targeted professional development programs, better integration across subjects, increased institutional support
Gap Between Awareness and Implementation	Clear gap identified
Importance of Teacher Role	Teachers can play a crucial role in fostering environmental consciousness

The findings underscore a clear gap between teachers' awareness of environmental issues and their practical implementation in the classroom. Addressing these barriers through targeted interventions could significantly enhance the effectiveness of environmental education in the region. The study concludes that with appropriate resources and support, teachers can play a crucial role in fostering environmentally conscious attitudes and behaviors among their students, contributing to the broader goal of sustainable development.

6. ANALYSIS AND DISCUSSION

The study's findings reveal several critical insights into the awareness and attitudes of secondary school teachers in the Begusarai, Samastipur, and Khagaria districts towards environmental issues. This section delves into the analysis of quantitative and qualitative data, discussing the implications and underlying factors contributing to the observed results.

The quantitative survey indicates a moderate level of environmental awareness

among teachers, with 70% demonstrating a basic understanding of environmental issues. This suggests that while there is a foundational knowledge, it is not sufficiently advanced or comprehensive. The variation in awareness based on demographic factors such as age, teaching experience, and educational background highlights the need for targeted educational interventions. Older and more experienced teachers, who might have had limited exposure to contemporary environmental education during their training, exhibit lower awareness levels compared to younger, recently trained teachers.

Teachers generally hold positive attitudes towards environmental protection, with 65% expressing favorable views. This positive disposition is a crucial factor as attitudes significantly influence behavior and teaching practices. However, there is a discrepancy between these attitudes and the actual implementation of environmental topics in the classroom. Only 40% of teachers regularly incorporate environmental issues into their teaching, indicating a significant gap between attitude and practice.

The in-depth interviews provide valuable insights into the challenges teachers face in integrating environmental education into their curriculum. The primary barriers identified include:

- **Lack of Resources:** Teachers report a shortage of up-to-date textbooks, teaching materials, and other resources necessary for effective environmental education. This lack of resources hampers their ability to provide students with current and relevant information.
- **Insufficient Training:** Many teachers feel inadequately prepared to teach environmental topics due to insufficient training. Professional development programs focusing on environmental education are either lacking or not widely accessible, leading to a confidence gap in teaching these subjects.
- **Crowded Curriculum:** The already packed curriculum leaves little room for additional subjects, making it challenging for teachers to incorporate environmental education without compromising other essential topics.

The study finds significant variations in environmental awareness and attitudes based on demographic factors. For instance, younger teachers and those with recent professional development experience in environmental education tend to have higher awareness and more proactive attitudes. This underscores the importance of continuous professional development and the need for updating the educational curriculum to include contemporary environmental issues.

7. RECOMMENDATIONS

To address the identified challenges and enhance the effectiveness of environmental education, the study proposes several recommendations:

- **Targeted Professional Development Programs:** These programs should focus on equipping teachers with the necessary knowledge and skills to effectively teach environmental topics. Regular workshops, seminars, and online courses can be instrumental in bridging the knowledge gap.

- **Integration of Environmental Topics Across Subjects:** Environmental education should not be confined to science subjects alone. Integrating environmental topics across various subjects, such as geography, social studies, and even language arts, can provide a more holistic approach to environmental awareness.
- **Increased Institutional Support:** Educational authorities should provide more resources and support to teachers. This includes supplying updated teaching materials, creating platforms for resource sharing among teachers, and reducing the curriculum load to allow room for environmental education.

8. CONCLUSION

By implementing these recommendations, teachers will be better equipped to foster environmentally conscious attitudes and behaviors among their students. This is crucial for the broader goal of sustainable development, as today's students are tomorrow's decision-makers. Educating them about environmental issues from a young age ensures they grow up with the knowledge, attitudes, and skills necessary to make informed decisions that contribute to the sustainability of their communities and the planet. In conclusion, while the study highlights a moderate level of environmental awareness and generally positive attitudes among secondary school teachers, it also identifies significant gaps in practical implementation. Addressing these gaps through targeted interventions and increased support can enhance the overall effectiveness of environmental education, ultimately contributing to sustainable development goals. By implementing these recommendations, teachers can be better equipped to foster environmentally conscious attitudes and behaviors among their students. This is crucial for the broader goal of sustainable development, as educating the younger generation about environmental issues ensures that they are prepared to make informed decisions and take responsible actions in the future. Ultimately, the study emphasizes the critical role that teachers play in shaping the environmental consciousness of future generations. By addressing the identified gaps and challenges, educational stakeholders can enhance the quality and effectiveness of environmental

education, contributing to a more sustainable and environmentally aware society.

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