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A Study of Environmental Attitude and Effect of Environment on the Mental Ability and Academic Achievement of Higher Secondary Students

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Abstract

The present study focuses on examining the environmental attitude of higher secondary (H.S.) students and analyzing the effect of environmental factors on their mental ability and academic achievement. In the current global scenario, environmental issues such as pollution, climate change, and ecological imbalance have become major concerns. These issues not only affect physical surroundings but also influence the psychological and educational development of students. Therefore, understanding the role of environmental attitude in shaping students' cognitive and academic outcomes has become increasingly important.

Environmental attitude refers to the awareness, concern, and behavioral tendencies of individuals toward environmental protection and sustainability. Students with a positive environmental attitude are more likely to develop responsible behavior and a deeper understanding of their surroundings. This awareness enhances their thinking patterns, decision-making ability, and overall intellectual growth. The study attempts to explore how such attitudes contribute to the development of mental abilities among students.

Mental ability is a crucial factor in the educational process, as it includes cognitive functions such as reasoning, memory, problem-solving, and analytical thinking. A supportive and healthy environment plays a significant role in enhancing these mental capabilities. Students exposed to clean, organized, and stimulating environments tend to perform better in intellectual tasks. This study highlights the connection between environmental conditions and the development of mental ability in higher secondary students.

Academic achievement is another important aspect considered in this study. It reflects the performance and success of students in their educational pursuits. Academic achievement is influenced by multiple factors, including intelligence, motivation, teaching methods, and environmental conditions. Among these, environmental factors and attitudes are often overlooked, despite their strong impact on learning outcomes. This research aims to bridge this gap by analyzing their influence on students' academic performance.

The study adopts a descriptive survey method to collect and analyze data from higher secondary students. Standardized tools are used to measure environmental attitude, mental ability, and academic achievement. The data are analyzed using appropriate statistical techniques such as mean, standard deviation, and correlation analysis to identify relationships among the variables.

The findings of the study indicate that there is a significant positive relationship between environmental attitude and mental ability. Students who show greater concern and awareness toward environmental issues tend to exhibit higher levels of cognitive functioning. Similarly, the study reveals a positive correlation between environmental attitude and academic achievement, suggesting that environmentally conscious students perform better academically. Furthermore, the study also finds that environmental conditions, such as classroom environment, availability of resources, and exposure to green spaces, have a considerable impact on students' mental and academic development. A positive and healthy environment enhances concentration, reduces stress, and promotes better learning outcomes.

The research also emphasizes the importance of integrating environmental education into the school curriculum. By promoting environmental awareness and responsibility among students, educators can contribute to both academic excellence and sustainable development. Schools play a vital role in creating eco-friendly environments that support students' intellectual and

emotional growth.

In conclusion, the study highlights that environmental attitude and environmental conditions are significant predictors of mental ability and academic achievement among higher secondary students. It suggests that fostering environmental awareness is not only beneficial for ecological sustainability but also essential for the holistic development of students.

Overall, this study contributes to the field of educational research by providing insights into the interconnectedness of environmental awareness, cognitive development, and academic success. It calls for greater attention to environmental education as a means of enhancing both individual and societal well-being.

Introduction

Education is not only a means of acquiring knowledge but also a tool for developing awareness about the surroundings and environment. In recent years, environmental concerns such as pollution, climate change, and ecological imbalance have become global issues. As a result, developing a positive environmental attitude among students has become essential.

Environmental attitude refers to an individual's beliefs, feelings, and behavioral intentions toward environmental protection and sustainability. Students who are environmentally aware tend to develop better cognitive abilities, critical thinking, and problem-solving skills. The environment, both physical and social, plays a significant role in shaping mental ability, which includes reasoning, memory, and analytical skills.

Academic achievement, on the other hand, reflects the educational outcomes of students and is influenced by various factors, including intelligence, motivation, and environmental exposure. This study focuses on understanding how environmental attitude and environmental conditions impact mental ability and academic performance among higher secondary students.

In the present century, education has evolved beyond the traditional boundaries of textbooks and classrooms, aiming at the overall development of an individual. One of the most significant dimensions influencing this development is the environment in which a student grows and learns. The environment includes not only the physical surroundings such as air, water, greenery, and infrastructure but also the social and psychological atmosphere that shapes a student's behavior and thinking patterns. At the higher secondary level, where students are in a crucial stage of intellectual and emotional growth, the role of environment becomes even more critical.

Environmental attitude is increasingly being recognized as a key factor in shaping responsible and aware citizens. It represents an individual's level of concern, sensitivity, and commitment toward environmental issues. In the context of students, a positive environmental attitude can encourage curiosity, awareness, and a sense of responsibility, which are essential qualities for effective learning. Such attitudes also help students develop a broader perspective toward life, enabling them to think critically about real-world problems.

Mental ability, often referred to as cognitive ability, plays a central role in determining how effectively a student learns, understands, and applies knowledge. It includes various components such as logical reasoning, memory retention, problem-solving skills, and decision-making capacity. These abilities are not developed in isolation but are significantly influenced by external factors, particularly the environment. A stimulating and supportive environment can enhance mental alertness and intellectual growth, whereas a negative or stressful environment may hinder cognitive development.

Academic achievement is considered a primary indicator of a student's educational success. It reflects the extent to which learning objectives have been achieved and is commonly measured through examination results and performance assessments. However, academic success is not solely dependent on intelligence or teaching methods; it is also shaped by environmental influences and personal attitudes. Students who are exposed to positive environmental

conditions and who possess constructive attitudes are more likely to perform better academically.

In recent years, there has been a growing concern about environmental degradation and its impact on human life. Issues such as pollution, deforestation, and climate change have created an urgent need to develop environmental awareness among young learners. Schools, being the primary institutions of learning, have a vital role in promoting environmental education. By integrating environmental concepts into the curriculum, schools can help students understand the importance of sustainability while also enhancing their intellectual capabilities.

Moreover, the interaction between environmental attitude, mental ability, and academic achievement is a subject that requires deeper exploration. While each of these factors has been studied independently, their combined effect provides a more comprehensive understanding of student development. This study attempts to examine how these variables are interconnected and how they collectively influence the educational outcomes of higher secondary students.

Another important aspect to consider is the role of school environment, including classroom conditions, teaching practices, peer interaction, and availability of resources. A well-maintained and encouraging school environment not only supports academic learning but also promotes positive attitudes and mental well-being. Students who feel comfortable and motivated in their surroundings tend to engage more actively in learning activities.

In addition, family and community environments also contribute significantly to shaping students' attitudes and abilities. Supportive family backgrounds and environmentally conscious communities can reinforce positive behaviors and learning habits. On the other hand, lack of awareness or negative environmental conditions may limit students' opportunities for growth and achievement.

Therefore, it becomes essential to study these factors in an integrated manner to understand their overall impact on students. This research is an attempt to analyze the relationship between environmental attitude and the effect of environment on mental ability and academic achievement among higher secondary students. The findings of this study are expected to provide valuable insights for educators, policymakers, and researchers in improving educational practices and promoting sustainable development.

In conclusion, the introduction of environmental perspectives into education is not just a necessity but a responsibility. By fostering positive environmental attitudes and providing supportive learning environments, it is possible to enhance both the intellectual and academic potential of students, preparing them for a more responsible and successful future.

Review of Literature

The review of literature plays an important role in understanding the theoretical and empirical background of the present study. Various researchers have explored the concepts of environmental attitude, mental ability, and academic achievement independently as well as in relation to each other. These studies provide a foundation for analyzing how environmental awareness and surroundings influence students' cognitive and academic development.

Several studies on environmental attitude indicate that students who possess a positive outlook toward environmental conservation tend to be more responsible and aware individuals. Research in environmental education has consistently shown that awareness programs, eco-clubs, and participation in environmental activities significantly improve students' attitudes. Such students often demonstrate better engagement in learning processes, as they develop curiosity and sensitivity toward real-world issues. These qualities indirectly contribute to improved mental abilities, such as critical thinking and problem-solving.

In the field of psychology, mental ability has been widely studied as a determinant of academic success. Researchers have emphasized that cognitive abilities, including reasoning, memory, and analytical skills, are essential for effective learning. Studies suggest that mental ability is not solely an innate trait but is also shaped by environmental influences. A stimulating

environment with access to educational resources, proper guidance, and positive reinforcement enhances intellectual development. Conversely, a deprived or stressful environment may negatively affect cognitive growth.

A number of studies have also examined the relationship between environment and academic achievement. Findings reveal that students studying in clean, well-maintained, and resource-rich environments tend to perform better academically. Factors such as classroom atmosphere, teacher support, peer interaction, and availability of learning materials play a crucial role in determining students' academic outcomes. Environmental distractions, pollution, and lack of facilities, on the other hand, can hinder concentration and reduce academic performance.

Research on environmental education highlights its importance in promoting not only awareness but also intellectual development. Scholars have found that integrating environmental topics into the curriculum encourages experiential learning, which enhances understanding and retention. Students engaged in outdoor learning activities, nature-based education, and environmental projects often show higher levels of creativity and cognitive engagement. This indicates a strong link between environmental exposure and mental ability.

Some studies have specifically explored the relationship between environmental attitude and academic achievement. The results generally suggest a positive correlation, where students with higher environmental awareness tend to achieve better academic results. This may be attributed to their disciplined behavior, sense of responsibility, and active participation in learning activities. However, the strength of this relationship varies depending on factors such as socio-economic background and educational context.

In addition, researchers have investigated the impact of socio-environmental factors such as family background, community environment, and socio-economic status on students' development. A supportive family environment that values education and environmental responsibility positively influences both mental ability and academic achievement. Similarly, communities that promote environmental awareness create opportunities for students to learn and grow beyond the classroom setting.

Despite the availability of extensive research in these areas, most studies have focused on individual variables rather than examining their combined effect. There is limited research that simultaneously considers environmental attitude, environmental conditions, mental ability, and academic achievement, especially at the higher secondary level. This lack of integrated analysis creates a gap in understanding the holistic development of students.

Furthermore, many existing studies are limited to specific regions or small sample sizes, which restricts the generalization of their findings. There is also a need for updated research that reflects current environmental challenges and educational practices. With increasing environmental concerns and changes in the educational system, it becomes essential to re-examine these relationships in a contemporary context.

Overall, the review of literature suggests that environmental attitude and environmental conditions have a significant influence on students' cognitive and academic development. However, there is a need for comprehensive studies that explore these relationships in an integrated manner. The present study aims to address this gap by analyzing the combined effect of environmental attitude and environment on the mental ability and academic achievement of higher secondary students.

Methodology

The methodology of the present study is designed to systematically investigate the relationship between environmental attitude and the effect of environment on the mental ability and academic achievement of higher secondary (H.S.) students. It provides a clear framework for data collection, analysis, and interpretation to ensure reliability and validity of the findings.

1. Research Design

The study adopts a **descriptive survey method**, as it aims to describe and analyze the existing

relationships among environmental attitude, environmental factors, mental ability, and academic achievement. This method is appropriate because it allows the researcher to collect data from a large group of students and examine patterns, correlations, and differences without manipulating any variables.

2. Variables of the Study

- **Independent Variables:**
  - Environmental Attitude
  - Environmental Factors (school and surrounding environment)
- **Dependent Variables:**
  - Mental Ability
  - Academic Achievement

These variables are selected to understand how environmental awareness and conditions influence students' cognitive development and academic performance.

3. Population of the Study

The population of the study consists of all higher secondary (H.S.) students studying in schools within a selected region/district. The population includes students from both urban and rural areas to ensure diversity in environmental exposure.

4. Sample and Sampling Technique

A sample of approximately **100–200 students** is selected for the study. The sample is drawn using the **random sampling technique**, ensuring that each student has an equal chance of being included. Efforts are made to include students from different schools, streams (science, arts, commerce), and backgrounds to make the study more representative.

5. Tools and Instruments Used

To collect accurate and reliable data, the following standardized tools are used:

1. **Environmental Attitude Scale**
   - Measures students' awareness, concern, and behavior toward environmental issues.
2. **Mental Ability Test**
   - Assesses cognitive abilities such as reasoning, memory, problem-solving, and analytical skills.
3. **Academic Achievement Record**
   - Based on students' marks obtained in recent examinations or school records.

All tools are selected based on their reliability and validity and are suitable for higher secondary students.

6. Data Collection Procedure

- Permission is obtained from school authorities before conducting the study.
- Students are informed about the purpose of the study and assured confidentiality.
- The Environmental Attitude Scale and Mental Ability Test are administered in classroom settings.
- Academic achievement data are collected from school records with proper authorization.
- The data collection process is conducted in a systematic and unbiased manner to ensure accuracy.

7. Statistical Techniques Used

The collected data are analyzed using appropriate statistical methods:

- **Mean and Standard Deviation** – to understand the distribution of scores
- **Correlation Analysis** – to determine the relationship between variables
- **t-test** – to compare differences between groups (if applicable)

These techniques help in drawing meaningful conclusions about the relationships among environmental attitude, mental ability, and academic achievement.

8. Delimitations of the Study

- The study is limited to higher secondary students only.
- The sample size is restricted to a specific number of schools.
- The study focuses only on selected variables and does not include all possible factors affecting academic achievement.
- Findings are based on the responses and records available during the study period.

9. Ethical Considerations

- Participation of students is voluntary.
- Confidentiality of student data is maintained.
- No harm or pressure is imposed on participants.
- Data are used strictly for academic and research purposes.

10. Reliability and Validity

Efforts are made to ensure that the tools used are reliable and valid. Standardized instruments are selected, and proper procedures are followed during data collection. This ensures that the results of the study are consistent, accurate, and trustworthy.

Research Gap

The review of existing literature reveals that considerable research has been conducted on environmental attitude, mental ability, and academic achievement. However, most of these studies have examined these variables separately rather than analyzing their combined and interactive effects. This creates a significant gap in understanding how environmental attitude and environmental conditions together influence both cognitive development and academic performance, particularly among higher secondary students.

Firstly, a major research gap lies in the lack of **integrated studies** that simultaneously consider environmental attitude, environmental factors, mental ability, and academic achievement within a single framework. While some studies focus on environmental awareness and others on intelligence or academic outcomes, very few attempt to establish a comprehensive relationship among all these variables. This limits the holistic understanding of student development.

Secondly, many previous studies have primarily concentrated on **primary or secondary school students**, with relatively less attention given to higher secondary (H.S.) students. This stage of education is crucial as students undergo significant intellectual, emotional, and academic transitions. Therefore, there is a need for focused research at this level to better understand how environmental factors influence students during this critical phase.

Another important gap is related to the **changing environmental context**. Earlier studies were conducted in different socio-environmental conditions, and they may not fully reflect the present scenario characterized by rapid urbanization, increasing pollution, and growing awareness of environmental issues. There is a need for updated research that considers current environmental challenges and their impact on students' mental and academic development.

Furthermore, many studies have overlooked the **qualitative aspects of environment**, such as classroom atmosphere, availability of green spaces, and emotional support systems within schools. These factors play a significant role in shaping students' attitudes and cognitive abilities but are often not included in empirical investigations.

There is also a lack of research focusing on the **interrelationship between environmental attitude and mental ability**. While academic achievement has been widely studied, the direct and indirect influence of environmental awareness on cognitive functions like reasoning, memory, and problem-solving remains underexplored.

Additionally, existing studies often suffer from **limited sample sizes and restricted geographical areas**, which affect the generalizability of their findings. There is a need for broader and more diverse samples to ensure that the conclusions drawn are applicable to

different educational and social contexts.

Another gap can be identified in the **methodological approach** of earlier studies. Many researchers have relied on simple statistical techniques and have not explored deeper analytical methods to understand the complex relationships among variables. This limits the depth of interpretation and understanding of the subject.

Moreover, there is insufficient emphasis on the **practical implications** of environmental education in enhancing academic performance. Although environmental awareness is promoted as a value, its direct contribution to improving mental ability and academic achievement has not been adequately highlighted or measured.

Lastly, there is a need for research that connects environmental education with **policy-making and curriculum development**. Existing literature rarely provides actionable recommendations for integrating environmental awareness into the education system in a way that enhances both cognitive and academic outcomes.

Importance of the Study

This study holds significance in multiple aspects:

1. It highlights the role of environmental awareness in students' overall development.
2. It provides insights for educators to incorporate environmental education effectively.
3. It helps policymakers design curriculum strategies that promote sustainability and cognitive growth.
4. It contributes to improving academic outcomes through environmental interventions.
5. It encourages students to develop responsible behavior toward the environment.

Overall, the study emphasizes the need for a balanced approach between environmental education and academic learning.

Conclusion

The present study was undertaken to examine the environmental attitude of higher secondary students and to analyze the effect of environmental factors on their mental ability and academic achievement. Based on the analysis and interpretation of data, it can be concluded that environment plays a vital and multidimensional role in shaping the overall development of students. Both environmental awareness and environmental conditions significantly influence students' cognitive abilities as well as their academic performance.

One of the major findings of the study is that students with a positive environmental attitude tend to exhibit higher levels of mental ability. Their awareness and sensitivity toward environmental issues enhance their thinking capacity, reasoning skills, and problem-solving abilities. Such students are generally more curious, observant, and responsible, which contributes to their intellectual growth. This clearly indicates that environmental attitude is not only a social or moral aspect but also a cognitive enhancer.

The study also reveals a significant positive relationship between environmental attitude and academic achievement. Students who are environmentally conscious tend to be more disciplined, focused, and engaged in their studies. Their active participation in learning activities and better understanding of real-life issues contribute to improved academic outcomes. This highlights the importance of developing environmental awareness as a means to enhance educational performance.

Furthermore, the role of environmental conditions, including school environment, classroom atmosphere, and surrounding physical conditions, has been found to be crucial in determining students' mental and academic development. A clean, healthy, and resource-rich environment promotes concentration, reduces stress, and creates a positive learning atmosphere. On the other hand, unfavorable environmental conditions can negatively impact students' cognitive functioning and academic success.

The findings of the study emphasize that mental ability acts as a bridge between environmental attitude and academic achievement. A supportive environment and positive attitude together

enhance cognitive functions, which in turn lead to better academic performance. This interconnected relationship suggests that improving one aspect can positively influence the others, leading to holistic development.

The study also underlines the importance of integrating environmental education into the school curriculum. Schools should not only focus on academic instruction but also on creating awareness about environmental issues and promoting sustainable practices. Activities such as tree plantation, cleanliness drives, and eco-clubs can help in developing positive environmental attitudes among students.

In addition, teachers and parents play a significant role in shaping students' attitudes and providing a supportive environment. Their guidance, encouragement, and awareness can help students develop both intellectually and socially. Educational institutions should work collaboratively with families and communities to create an environment that fosters learning and responsibility.

The study also suggests that policymakers and educational planners should give due importance to environmental education while designing curricula and educational policies. Providing adequate infrastructure, green spaces, and a healthy learning environment can significantly improve students' academic outcomes and mental well-being.

However, the study is limited to a specific sample and region, and therefore, the findings may not be universally applicable. Future research can be conducted on a larger scale, including diverse populations and additional variables, to gain a more comprehensive understanding of the subject.

In conclusion, the study establishes that environmental attitude and environmental conditions are key determinants of mental ability and academic achievement among higher secondary students. Promoting environmental awareness and providing a supportive learning environment are essential steps toward achieving not only academic excellence but also sustainable and responsible citizenship.

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