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REPRESENTATION OF ENVIRONMENTAL THEMES IN PRIMARY SCHOOL TEXTBOOKS: A CONTENT ANALYSIS FROM CHHATTISGARH

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Abstract

Environmental education at the primary stage plays an important role in developing children's understanding of their surroundings and encouraging sensitivity towards nature and natural resources. School textbooks are significant instruments through which curricular objectives are translated into concrete learning experiences. The present study examines the representation of environmental themes in the Environmental Studies (EVS) textbooks prescribed by the State Council of Educational Research and Training (SCERT), Chhattisgarh, for Classes III, IV and V. The study employs qualitative content analysis to identify major environmental themes and examine the ways in which they are presented through textual content, activities, examples, questions and local contexts. The analysis focuses on natural resources, water, air, soil, plants, animals, forests, agriculture, biodiversity, pollution, conservation and environmental hazards. Particular attention is given to the extent to which environmental education is connected with children's everyday experiences and the ecological and socio-cultural context of Chhattisgarh. The analysis reveals a gradual progression from basic environmental awareness and observation in Class III towards greater emphasis on local resources, biodiversity, environmental problems and conservation in Classes IV and V. The textbooks also demonstrate a strong experiential orientation through observation, collection, experimentation, surveys and interaction with family and community members. The study concludes that the selected textbooks provide substantial opportunities for environmental learning by integrating environmental knowledge with children's everyday experiences and local contexts.

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1. INTRODUCTION

The environment constitutes an essential part of human life and children's everyday experiences. At the primary stage, children encounter the environment through their homes, schools, neighbourhoods, plants, animals, water, soil, food, seasons and local communities. Environmental education at this level therefore needs to move beyond the transmission of factual information and enable children to observe, explore, understand and develop sensitivity towards their surroundings.

The importance of environmental education has increased considerably in the context of growing concerns related to pollution, resource depletion, biodiversity loss, climate change and unsustainable patterns of human activity. Education can contribute to developing not only environmental knowledge but also values, attitudes, skills and responsible behaviour. UNESCO emphasises that Education for Sustainable Development should enable learners to develop knowledge, values, attitudes and competencies that support responsible decision-making and action (UNESCO: 2017).

In India, the National Curriculum Framework (NCF) 2005 advocated an integrated and child-centred approach to Environmental Studies at the primary level. Rather than treating environmental learning as a collection of isolated facts, the framework emphasises children's experiences and their relationships with natural, social and cultural environments (NCERT: 2005). The learning outcomes developed by NCERT similarly emphasise observation, exploration, inquiry, awareness and sensitivity towards the environment (NCERT: 2017).

Textbooks occupy an important position in this process. They are not merely repositories of information but provide children with particular ways of understanding the world. The environmental themes selected, examples provided, illustrations used and activities prescribed can influence how children perceive their relationship with nature and environmental problems. Therefore, analysing textbooks can provide valuable insights into the nature of environmental education being made available to learners.

This issue is particularly relevant in the context of **Chhattisgarh**, a state characterised by ecological, geographical, social and cultural diversity. Forests, rivers, agricultural landscapes, plants, wildlife and natural resources form important parts of the state's environment and the livelihoods of many communities. The SCERT Chhattisgarh textbooks explicitly acknowledge the importance of natural, cultural and social surroundings and state that environmental concerns including forests, animals, plants and trees, rivers, water, pollution and natural disasters have been considered in the preparation of the material.

The Class III textbook is explicitly designed around children's surroundings. It states that examples, activities and pictures have been related to children's experiences and that learners should receive opportunities to search, observe, discuss and find solutions. Environmental themes include natural resources, plants and trees, soil and water. Air, water, soil, living organisms, minerals and fuel are introduced as resources obtained from nature.

Class IV expands environmental learning through dedicated themes such as water, air, flora and fauna, paddy cultivation, seasons and domestic animals. Its learning objectives specifically include understanding water, air, soil, plants and living organisms, identifying causes and effects and suggesting ways of protecting natural resources.

Class V provides a wider environmental perspective by incorporating themes such as the Mahanadi, forests of Chhattisgarh, animals, solar energy, seeds, mud and stones and disaster management. Through these topics, environmental learning is connected with pollution, biodiversity, livelihoods, natural resources, conservation and environmental hazards.

The present study therefore examines how environmental themes are represented in the selected textbooks and explores the extent to which this representation reflects **experiential learning, conservation values and local environmental realities of Chhattisgarh**.

2. REVIEW OF RELATED LITERATURE

Environmental education has gradually moved from a predominantly information-based approach towards one that combines knowledge with values, skills, participation and responsible action. The National Curriculum Framework 2005 provides an important foundation for this approach in India.

It recommends that Environmental Studies at the primary stage should be connected with children's experiences and their interaction with natural, social and cultural environments (NCERT: 2005).

NCERT's learning outcomes for Environmental Studies further emphasise observation, questioning, exploration and sensitivity towards environmental issues. Learning is expected to begin with the child's immediate environment and gradually extend towards wider social and ecological contexts (NCERT: 2017).

At the international level, UNESCO's framework for Education for Sustainable Development highlights the importance of developing knowledge, cognitive abilities, socio-emotional competencies and behavioural capacities for addressing environmental and sustainability challenges (UNESCO: 2017). This suggests that environmental education should not be assessed simply on the basis of the number of environmental topics included in a curriculum. It is equally important to consider how environmental themes are represented and what kinds of learning experiences they create.

The selected SCERT textbooks reflect several of these principles. The Class III textbook emphasises observation, collection, discussion and independent or group activity. Class IV explicitly promotes comparison, classification, experimentation, identification of causes and effects and suggesting ways of protecting natural resources.

The textbooks also demonstrate the importance of local context. For example, Class IV discusses paddy as an important crop of Chhattisgarh and encourages learners to interact with farmers and elders regarding cultivation practices. Such contextualisation is important because environmental concepts become more meaningful when learners can relate them to familiar landscapes, resources and livelihoods.

Despite the emphasis placed by curriculum frameworks on environmental education, there remains a need to examine how these objectives are translated into actual textbook content at the state level. The present study addresses this need through a systematic analysis of selected SCERT Chhattisgarh textbooks.

3. NEED AND SIGNIFICANCE OF THE STUDY

Environmental education at the primary stage is important for developing environmental awareness, sensitivity and responsible attitudes at an early age. Since textbooks provide structured learning experiences to children, their analysis can reveal the types of environmental knowledge, values and practices that are prioritised in formal education.

The study is particularly relevant to Chhattisgarh because environmental learning can be meaningfully connected with the state's forests, rivers, agriculture, biodiversity and community life. The selected textbooks provide several examples of this local orientation, including paddy cultivation in Class IV and the Mahanadi and forests of Chhattisgarh in Class V.

The study is also significant because environmental learning in the selected textbooks is not restricted to descriptions. Learners are asked to observe, collect, classify, experiment, survey and communicate with elders and community members. The Class III textbook, for instance, asks children to collect and compare soil samples from fields, ponds, rivers, roads and other places and conduct a simple experiment with soil and water.

The analysis can therefore help determine whether the textbooks provide environmental learning that is **knowledge-oriented, experiential, locally relevant and conservation-oriented**.

4. OBJECTIVES OF THE STUDY

The study aims:

1. To analyse the representation of environmental themes in the Environmental Studies textbooks of Classes III, IV and V in Chhattisgarh.
2. To identify the major environmental themes represented in the selected textbooks.
3. To examine the progression of environmental themes across Classes III–V.
4. To examine the representation of environmental conservation and responsible environmental behaviour.
5. To analyse the extent of local contextualisation of environmental themes.

6. To examine the use of experiential and participatory activities in environmental learning.

5. RESEARCH QUESTIONS

1. What major environmental themes are represented in the selected textbooks?
2. How do environmental themes develop across Classes III, IV and V?
3. To what extent are environmental themes connected with the local context of Chhattisgarh?
4. What pedagogical activities are used to develop environmental understanding?
5. To what extent do the textbooks promote environmental awareness and conservation?

6. RESEARCH METHODOLOGY

6.1 RESEARCH DESIGN

The study employs a **qualitative content analysis** approach. The purpose is to systematically identify, classify and interpret environmental themes and the ways in which they are presented in the selected textbooks.

6.2 SOURCES OF DATA

The primary sources of the study are the SCERT Chhattisgarh Environmental Studies textbooks prescribed for **Classes III, IV and V**. The Class III textbook is identified as the 2024–25 Environmental Studies textbook published by SCERT Chhattisgarh. The Class IV textbook includes 25 lessons, with specific environmental content relating to water, air, flora and fauna, paddy cultivation, seasons and domestic animals.

6.3 UNIT OF ANALYSIS

The lesson/chapter was treated as the primary unit of analysis. Relevant textual passages, examples, activities, questions and exercises were also considered where they directly addressed environmental themes.

6.4 ANALYTICAL CATEGORIES

Environmental content was organised under the following broad categories:

- Natural resources
- Water and water conservation
- Air and soil
- Plants and trees
- Animals and biodiversity
- Forests and forest resources
- Agriculture
- Pollution
- Environmental conservation
- Energy and natural resources
- Environmental hazards
- Experiential and participatory learning

The analysis also considered **local contextualisation**, particularly references to Chhattisgarh's forests, rivers, agriculture, biodiversity and communities.

7. ANALYSIS AND DISCUSSION

7.1 ENVIRONMENTAL THEMES IN CLASS III

Class III provides the foundation for environmental learning by beginning with children's immediate surroundings. The textbook explicitly states that natural, cultural and social aspects of children's surroundings have been incorporated and that the material has been designed to be child-centred.

a. Natural Resources

The concept of natural resources is introduced through familiar elements. Children learn that air, water, soil, living organisms, minerals and fuel are obtained from nature and are referred to as natural resources. They are asked to identify things obtained directly from nature and distinguish them from human-made objects.

The textbook further asks learners to consider the importance of air, water, soil and living organisms in daily life. This approach introduces environmental concepts through **familiar experiences rather than abstract definitions**.

b. Plants And Trees

Plants and trees receive considerable attention. Children are asked to identify plants and trees around their houses, villages and gardens and classify them according to characteristics such as height, fruits, leaves and thorns. The textbook explains their usefulness in providing air, food, flowers, medicines, wood and shelter and discusses their relationships with birds, insects and animals.

Environmental conservation is introduced alongside this knowledge. Learners are asked to find out who planted trees in their locality and how they are cared for. They are encouraged to plant trees, protect them and prevent unnecessary cutting.

c. Soil

Soil is represented through direct observation and experimentation. Learners are instructed to collect soil samples from different places such as fields, orchards, ponds, rivers, grounds and roads and compare their colour and characteristics. They subsequently conduct an experiment by placing soil samples in water and observing the resulting layers.

Thus, Class III establishes a basic environmental foundation through **natural-resource awareness, observation, local investigation and simple conservation values**.

7.2 ENVIRONMENTAL THEMES IN CLASS IV

Class IV broadens the scope of environmental learning. Water, air, flora and fauna and agriculture receive more systematic treatment, while environmental learning becomes increasingly connected with observation, classification and local practices.

a. Water and Water Conservation

The textbook presents water as essential for life and introduces the consequences of inadequate access to clean water. It discusses diseases associated with dirty water and asks learners to identify methods of cleaning drinking water at home. It also asks children to identify sources of water in their village or colony, investigate whether these sources have become dirty and identify reasons for such pollution. Questions on ways of conserving water further introduce the idea of responsible resource use.

The treatment of water therefore combines **knowledge, health awareness, local observation and conservation**.

b. Flora and Fauna

The textbook encourages children to collect leaves from their surroundings, observe their features and make patterns from them. It also asks learners to identify medicinal plants and flowers in their area and find out about their uses.

Such activities represent biodiversity through direct observation and local knowledge rather than merely through textbook descriptions.

c. Agriculture and Paddy Cultivation

The chapter on **“The Crop of Chhattisgarh – Paddy”** is particularly significant for regional contextualisation. The textbook explains that paddy is widely grown in the state and requires considerable water. It describes preparation of fields, sowing, planting, fertilisation and weeding.

Learners are also asked to interact with farmers to find out when paddy is sown, what varieties are grown, which diseases affect crops and what preventive measures farmers adopt.

This chapter connects **soil, water, agriculture, local knowledge and livelihoods**, making environmental learning particularly relevant to the regional context.

d. Pedagogical Orientation

Class IV's stated learning objectives emphasise observation, comparison, classification, identifying causes and effects, understanding natural resources and suggesting measures for protecting them.

Thus, environmental education at this level moves beyond basic recognition towards **investigation, classification, local agricultural knowledge and resource protection**.

7.3 ENVIRONMENTAL THEMES IN CLASS V

Class V presents the broadest range of environmental concerns and develops a more problem-oriented approach. Themes related to rivers, forests, biodiversity, pollution, resource use, energy and disaster management provide opportunities for understanding relationships between humans and the natural environment.

a. The Mahanadi and Water Pollution

The representation of the Mahanadi provides a strong example of local environmental contextualisation. The river is used as a context for discussing pollution resulting from human activities. The textbook encourages learners to identify waste entering rivers and ponds and to think about ways of preventing water pollution.

This approach moves environmental education beyond the simple identification of “water pollution” and connects it with **human behaviour, waste management, water resources and environmental responsibility**.

b. Forests and Biodiversity

The treatment of the forests of Chhattisgarh is one of the strongest environmental components in the selected textbooks. Learners are introduced to locally significant trees and forest resources, while forest products are connected with the livelihoods of local communities.

The representation of forests therefore combines ecological and socio-economic dimensions. Forests are not presented simply as collections of trees but as environments that support biodiversity and human livelihoods.

c. Deforestation and Wildlife Conservation

Class V also introduces the consequences of forest degradation. Learners are encouraged to think about what may happen to animals if forests continue to decline and to investigate changes in forests in their locality. Such activities encourage children to consider the relationship between environmental change, wildlife and human communities.

The textbook also introduces protected areas and conservation, thereby moving from environmental awareness towards **conservation-oriented thinking**.

d. Resource Use and Environmental Problems

Environmental concerns in Class V are increasingly linked with human needs and resource use. Activities related to water, electricity, food and other resources encourage children to think about increasing needs and the possibility of resource scarcity.

The inclusion of solar energy and disaster management further expands environmental learning towards **energy resources, environmental risks and preparedness**.

Overall, Class V represents a shift towards **environmental problem recognition, conservation, resource management and human–environment relationships**.

TABLE 8:

COMPARATIVE ANALYSIS OF ENVIRONMENTAL THEMES

Environmental Theme	Class III	Class IV	Class V
Natural Resources	Introduction to air, water, soil, living organisms, minerals and fuel	Importance and protection of resources	Resource use, scarcity and sustainability concerns
Water	Sources, uses and basic conservation	Clean water, diseases, sources and conservation	River environment and pollution
Soil	Observation and experimentation	Connection with farming	Mud, stones and natural resources
Plants	Identification, uses and protection	Flora, leaves, flowers and medicinal plants	Forest vegetation and forest resources
Animals	Relationship with plants	Flora, fauna and domestic animals	Wildlife and biodiversity conservation
Forests	Trees and immediate surroundings	Limited/local references	Forests, livelihoods, deforestation and conservation
Agriculture	Basic relationship with natural resources	Paddy cultivation and farmer knowledge	Seeds and resource relationships
Pollution	Basic awareness	Local water contamination	Explicit water pollution and human causes
Conservation	Trees and natural resources	Water and resource	Forest, wildlife and water

		protection	conservation
Learning Approach	Observation and simple activities	Classification, experimentation and local inquiry	Investigation, surveys, discussion and problem-solving

The comparison reveals a clear progression. **Class III establishes foundational environmental awareness; Class IV develops local ecological and resource-based understanding; and Class V introduces more complex environmental problems and conservation concerns.**

The progression is also visible in the nature of activities. Younger learners are primarily asked to observe, identify and collect, whereas higher classes increasingly involve investigation, interaction with farmers or elders, local surveys and consideration of environmental problems.

9. MAJOR FINDINGS

The content analysis reveals the following major findings:

1. Broad representation of environmental themes

The textbooks cover a substantial range of environmental concerns, including water, air, soil, plants, animals, forests, agriculture, natural resources, pollution, conservation, energy and environmental hazards.

2. Progressive development across classes

The environmental content demonstrates a gradual progression from **basic awareness in Class III to greater conceptual and problem-oriented understanding in Class V.**

3. Strong local contextualisation

The textbooks make meaningful use of Chhattisgarh-specific environmental examples. Paddy cultivation, forests, the Mahanadi, local plants and forest-related livelihoods provide regional contexts for environmental learning.

4. Experiential learning

Observation, collection, experimentation, classification and local investigation are important pedagogical strategies. The textbooks encourage learners to engage with actual environmental objects and situations rather than depending solely upon textual explanations.

5. Conservation values

Environmental conservation is repeatedly represented through tree protection, water conservation, responsible resource use, prevention of pollution and protection of forests and wildlife.

6. Integration of environment and society

The textbooks increasingly connect environmental concerns with human livelihoods, agriculture, community practices and resource needs. This is particularly visible in the treatment of paddy cultivation and forests.

7. Increasing problem orientation

Class V contains a stronger emphasis on environmental problems such as water pollution, deforestation, wildlife decline, resource scarcity and environmental hazards. This indicates movement towards a more critical understanding of human–environment relationships.

10. CONCLUSION

The present content analysis demonstrates that environmental themes occupy a significant place in the Environmental Studies textbooks of Classes III, IV and V in Chhattisgarh. The selected textbooks provide broad coverage of natural resources, water, soil, plants, animals, agriculture, forests, biodiversity, pollution and conservation.

A significant strength of the textbooks is their **local and experiential orientation.** Environmental concepts are frequently connected with children’s immediate surroundings, while region-specific examples such as paddy cultivation, the Mahanadi and the forests of Chhattisgarh make learning more relevant to learners’ social and ecological contexts.

The progression across classes is also noteworthy. Class III focuses largely on recognising and understanding natural resources and the immediate environment. Class IV develops this understanding through observation, classification, agriculture and local ecological knowledge. Class V extends the learning towards pollution, deforestation, biodiversity, resource use and conservation.

The pedagogical treatment further strengthens this progression. Children are encouraged to observe, collect, classify, experiment, conduct surveys, interact with farmers and elders and think about environmental problems. Such approaches are consistent with the broader child-centred and experiential orientation advocated in environmental education (NCERT: 2005; NCERT: 2017).

Overall, the selected SCERT textbooks demonstrate a meaningful attempt to integrate **environmental knowledge, local context, experiential learning and conservation values**. They provide a useful foundation for developing environmentally aware and responsible learners. At the same time, the findings indicate scope for strengthening sustained engagement with broader concepts of sustainability, environmental responsibility and collective environmental action in future textbook development.

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