

# ANALYSIS OF EXISTING CLASS III ENVIRONMENT STUDIES TEXTBOOK

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The NCF-2005 recommends an integrated approach for environment studies towards the primary years of schooling. The NCERT brought out syllabus and textbooks and teacher support materials in the light of NCF-2005. We all know the irreplaceable value of textbooks in students acquisition of scientific knowledge, as evident in most countries, including India. Therefore, it is essential to evaluate the existing textbooks for their revision. An attempt has been made to analyse the Class III EVS textbook published by NCERT from the perspective of NCF-2005. The author thoroughly analysed it in order to check its content, organisation, pedagogical aspects, assessment, layout, addressing national concerns, etc. Further suggestions are also provided to improve the textbook.

## Introduction

Recognising the critical role of education in environmental protection and preservation, the National Policy on Education (NPE, 1986) states, "There is a paramount need to create a consciousness of the environment. It must permeate all ages and sections of society, beginning with the child. Environmental consciousness should inform teaching in schools and colleges. This aspect will be integrated into the entire educational process". The NPE 1986 and the subsequent educational policies or committees have firmly positioned environmental awareness and education in school education. The latest National Curriculum Framework (NCF) 2005 recognises the critical role of the environment in the context of children's learning by emphasising, "Learning takes place through interactions with the environment around nature, things and people, both through actions and through

language. The physical activity of moving, exploring and doing things, on ones own, with ones peers, or in the company of adults and using language—to read, to express or ask, to listen and to interact—are the key processes through which learning occurs. The context in which learning takes place is, thus, of direct cognitive significance for meaningful learning" (NCF-2005).

The position paper of the National Focus Group (NFG) on Habitat and Learning (NCERT, 2006c) states, "The new paradigm of education, embodying the spirit of science, of democracy and of caring for the environment, would emphasise several vital elements— Learning rather than teaching; building capacity for critical thinking and problem solving; locale specificity in the context of a global vision; multidisciplinary approach; multi-sourced and accessed, rather than top-down, controlled and orchestrated in nature; participatory with broad involvement of peers and other community members: Lifelong

and continuous in character; sensitivity to diversity, equity and gender; knowledge generation; and empowerment, rather than indoctrination.

In another position paper of National Focus Groups (NFG) on Curriculum, syllabi and textbooks of the NCERT (2006) stressed, "What is needed is not a single textbook but a package of teaching-learning material that could engage the child in active learning. The textbook thus becomes a part of this package and not the only teaching-learning material". Further, it is also said that a "Good textbook should lead the child to interact with the environment, peers and other people rather than transferring knowledge as a finished product." Further, it provides a guideline for textbook development "Stress on students can be reduced if textbook writers focus on the elaboration of concepts, activities, spaces for working out problems, exercises encouraging reflective thinking and small group work, leaving the definition of technical terms to a subject dictionary (NCERT, 2005)."

Regardless of the above statement, it is witnessed that textbooks are the only resource the students depend on in many countries, including India. Textbooks are widely accepted as a standard feature of the classrooms worldwide and essential vehicles for promoting curricular activities. There are many characteristic features that make a good textbook. The textbook analysis is a very important exercise that helps in improving the textbooks and their usage. The history of textbook analysis and various ways of conducting it is elaborated by Nawani (2010). Textbooks are generally analysed using various criteria, including physical and academic aspects, including

organisation, content, presentation, accuracy, readability, adaptability, teaching-learning aids, illustration and appearance.

Many research studies were carried out on textbook analysis, where the researchers developed questionnaires based on which the analysis was done (Ojha, 2016; Medh, 2006; Prakash, 2011). Prakash (2011) carried out a content analysis of environment education textbooks at the primary stage, i.e., Class III to Class V, in schools following the Rajasthan Board of Secondary Education. Class III, IV (Part I and II) and Class V textbooks (Part I and II) in environmental education were evaluated to provide guidelines for developing new textbooks. Results of the study indicate that textbook needs immense improvement in themes and sub-themes of each chapter; diagrammatic representation; examples provided in chapters; linguistic analysis; errors in both grammatical and printing and practice questions or exercises.

Sarmah and Sailendra (2015), analysed environmental education components in the existing textbooks prepared by SCERT, Assam at the elementary level for Classes V–VII. The study results revealed that the contents of environmental education are not sufficient for fulfilling all the objectives of environmental education in the schools. The contents integrated into different subjects are free from factual errors and the weightage given to the objectives of developing skills and attitude need to be increased. There is a need for more examples, illustrations and project activities, preferably from learners immediate environment in the textbooks. In language, science and social science textbooks, focus and emphasis are given only to enriching the students' cognitive abilities and partially

neglected affective and psychomotor domains.

Nair (2010), elaborated on environmental education and curriculum at Primary Level. She has proposed a scheme to evolve a new revised environmental education curriculum. A survey for relevant social and biophysical parameters was carried out on samples of Class III, IV and V students and teachers of Demonstration Multipurpose School, RIE, Mysore. It was found that there is a lack of environmental and socio-cultural issues, which are essential to make environmental education more locally influential.

The NCERT has been continuously analysing various states school curricula, especially post NCF-2005. For example, in 2016, NCERT analysed the EVS textbook of Nagaland for Class III and found that the text was well presented and suggested a need for guidelines to teachers so as to ensure that activities are being carried out in a more participatory model, encouraging thinking, exploration and connecting with their immediate environment. Further, NCERT (2013–17), carried out a research study to analyse the secondary school curriculum of 18 states, where all the school textbooks were analysed. The results indicate that there are many issues an concerning an overload of content, language-related, inclusion-related, poor interactivity, partially child-centric, etc. After the research studies, many states revised their textbooks in light of the research findings.

From a review of the related literature given above, it is essential to periodically analyse or evaluate the textbooks to get feedback so that they can be improved from time to time. Thus

analysis of textbooks is an essential step in improving the textbooks specifically and the quality of the teaching-learning process. It is felt apt to analyse the textbook at this hour as the curriculum review process is progressing now at NCERT. The findings of this study would help develop or revise new textbooks in the coming years.

### **Objectives of the study**

The main objective of the study is:

- to analyse the Class III EVS textbook of NCERT;
- to suggest measures for improvement of the EVS textbook.

### **Method**

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The researcher thoroughly analysed the textbook keeping the criteria developed. The chapter-wise content was analysed regarding age-appropriateness, inclusion, gender sensitivity, child-centredness, continuity, quality of illustrations, pedagogical aspects, assessment, etc. The analysis was conducted to examine basic features, its cognitive operations and classroom organisation, and the section and sequence of contents. The findings drawn from the analysis are discussed below.

### **Discussion of Findings**

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#### **About the book**

The book title is, “Looking Around Textbook for Class III,” published by NCERT, New Delhi. The first edition was done in 2006. There are 24 chapters of 158 pages with

colourful illustrations, narratives, activities, worksheets, etc.

### **The Preliminary pages of the book**

It includes, Foreword, Acknowledgements, Textbook Development Committee list and Table of Contents. The book also has additional elements like a detailed note for teachers and parents. This 4-page descriptive note details the book's intent, content and a brief explanation of the methods and sets the tone of how EVS is learned. The organisation and content of the textbook reflect the five guiding principles of the NCF-2005 framework as described in the position paper on curriculum, syllabus and textbook.

### **Note to teachers and parents**

There are separate guidelines for teachers and parents. These guidelines throw light on the methodology followed in the textbook. A few symbols and icons are used in the textbook to indicate discuss, narrate or tell, write, think, do or make, find out and a note for the teacher as guiding points. A separate note for the teachers and parents is given before the chapters pointing out the syllabus, themes, interrelation of topics and integration of science and social science, that is, physical, social and cultural contexts in the textbook. Directions or concerns that a teacher needs to address while using the textbook are also mentioned. Emphasis is laid on relating the child's local knowledge to the school knowledge and further made clear that the activities given are suggestive only. It was very clearly stated that the teachers need to use the environment—physical, natural, social and human—resources while teaching-learning environment studies. Multiple ways of expressing children's experiences, opinions, or ideas must be encouraged. The textbook

provided ample scope regarding activities and questions asked at the end of the chapters. Assessment of the students should be primarily on the competencies and skills developed by the students while working in the class or outside. The textbook integrated continuous and comprehensive evaluation through the assessment questions, activities, projects, etc. It was made very clear that this textbook should only be viewed as an aid to the teacher, around which the teacher could organise her teaching to provide learning opportunities to children. The lesson's objective for some chapters is given in the note to the teacher, and instructions and directions for conducting activities also find a place in the footnote of the pages [Syllabus for classes at the elementary level, NCERT 2006a].

### **Linkage with curricular expectations and syllabus**

The NCF-2005, indicates the objectives of teaching science and social sciences at the Primary Stage as follows:

- to train children to locate and comprehend the relationship between the natural, social and cultural environment;
- to develop an understanding based on observation and illustration, drawn from lived experiences and physical, biological, social and cultural aspects of life rather than abstractions;
- to create cognitive capacity and resourcefulness to make the child curious about social phenomena starting with the family and moving on to wider spaces;

- to nurture the curiosity and creativity of the child, particularly concerning the natural environment;
- to develop an awareness about environmental issues;
- to engage the child in exploratory and hands-on activities to acquire basic cognitive and psychomotor skills through observation, classification, inference, etc.

NCERT 2006a, keeps the above objectives in mind within a social constructivist perspective. In EVS, several themes that provide a standard interface of issues in social sciences, science and environmental education were included. These themes have a web of connections (skills, concepts) that need to be developed over the years. Therefore, the syllabus begins with critical questions rather than critical concepts. There are six themes around which the EVS syllabus of Classes III to V is woven.

### Themes

1. Family and friends – relationships, Work and play, Animals and Plants
2. Food
3. Shelter
4. Water
5. Travel
6. Things we make and do

All the themes above are related to the lived experiences of learners. Over the three years, the syllabus web moves outward, that is, gradually extending from the child's understanding of her world, that is, immediate self to family to neighborhood to locality and

country. Based on the need and importance of the topics under each theme, several topics and instructional time are decided.

### Developing environment consciousness

Concern for environment is consciously integrated into all the lessons through activities like conservation through rainwater harvesting in the chapter "Drop by Drop." Sensitivity towards animals, responding to the needs of pets and animals, the interdependence of living beings in the environment, and the food of animals in the chapter "Our friends" was given. The problems faced by homeless people and sensitivity towards it in the chapter "A house like this"; sensitivity towards gender roles in the chapter "The story of food"; sensitivity or concern towards children with special needs in the chapters "Sharing our feelings" and "Saying without speaking" have also been very well designed. Adequate care was taken to weave these chapters into the curriculum.

### Scope to interact with surroundings

Most of the activities are consciously planned and presented so that the children observe the surroundings, interact and learn through experiences.

### Child-centred approach

- Suitability for student diversity: The book is suitable for different kinds of students— gifted and average— and has creative content to suit the learners interests. The examples were drawn from the local environment to provide opportunities to draw inferences.
- Moving away from rote learning: The textbooks contents pave the path to multifarious and multisensory

activities. The textbooks approached the formulation of generalisations rather than presenting facts and concepts directly.

- Stimulate thinking and encourage children's ideas: It is observed that there is much scope in the form of activities where the child is encouraged to think, reason what, why and how of happenings in the surroundings. In other words, the textbook further allows and supports the meaning-making process. Further, the children are stimulated to consider social issues and concerns like water conservation.
- Scope to express: Every lesson has activities where the child is given opportunities to express their emotions, feelings, views and opinions and discuss with their fellow beings and teacher in various ways—verbal and nonverbal ways. For example, in chapter, 'Foods we eat', activities include discussing what they ate, storytelling, talking to elders, reading and filling in the blanks. Activities promoting expression of ideas through a creative piece of work—making animal pictures with dry leaves, imprinting, rubbings, identifying patterns in surroundings (in the chapter 'The plant fairy'). It is done in an age-appropriate manner. The themes and activities have room for promoting critical pedagogies where the learner places their argument before deciding on issues and problems.
- Variety of activities: There are adequate individual and group activities. Activities that lead to hands-on experiences involving collaborative spaces find a place in the textbooks. The children are given space to demonstrate their skills through activities. Activities are motivating and make learning better. They are found to be feasible except for a few activities like how many drops will fill a spoon, bowl, mug and bucket
- Principles of teaching: The textbook begins with simple and moves to complex ideas. Hence, we find the lesson starts with activities or daily life incidents close to the child's heart and then gradually progresses to unfamiliar, new complex concepts. As the book caters to the diverse and heterogeneous population, the textbook considers both the local and external knowledge. An attempt was made to bring in contexts from all the states to bring in native flavour for every child. It may be in language or example or clothing or food habits, etc.
- Language used: The writing style is simple and lucid and up to the intellectual level of the students of that age group. The book literary style has covered the length of sentences, continuity of thought, etc. The language used in all the chapters is simple and easy to understand and new terms were introduced wherever required
- Pedagogical processes: The textbook does not provide definitions directly; instead, opportunities are provided to arrive at them. The textbook has taken adequate care to use the environment as a resource and children learn in the environment through activities. The textbook strongly believes in a plurality

of resources, hence, providing scope of availability of various resources—physical, human, etc. The textbook uses activity-based learning where the children observe, identify and write names, read pictures, mimic colours, complete pictures, solve crossword puzzles (who am I), do creative work like using thumbprints to draw pictures of animals, draw pictures part by part in a group, arrange them in the order of size (sequencing), jigsaw puzzle of arranging the pieces together, pasting and identifying the animal in the picture, etc.; in some playing games, multisensory approaches—touch, smell, feel, discussions, recitation of poems, collection of specimens, creative piece of work—making animal pictures with dry leaves, imprinting, rubbings, identifying patterns in surroundings, etc.

- **Interactivity:** Interactivity is very well taken care of keeping the students engage with conversations. Activities; discussions and interactions throughout the class make the class lively and exciting. The text is written so that students are encouraged to have a dialogue and share ideas with one another throughout the class.
- **Art integration:** The students are given opportunities to do creative work with the locally available materials in most chapters. For instance, in the chapter “A beautiful cloth,” activities like weaving paper, making patterns with natural dyes (vegetable); “A house like this,” and “Making pots” have activities like clay model making; “Here comes a

letter” drawing, making a letter box and collection of stamps find a place in the textbooks.

- **Illustrations:** Illustrations are large and clear, diagrams are well labelled in a few places and they are very much related to the learning experiences. Diagrams and illustrations are self-explanatory. Graphics can be improved in terms of quality, especially drawing pictures in a realistic way may be encouraged.
- **National integration:** It is essential to develop a sense of national integration among the students. In this direction, the book handled various discrimination and other related issues very amicably. In addition, it provided space for children to reflect on social issues.
- **Curriculum overload:** It is found that the book seemed to be written in such a way that children think, explore and can be kept engaged in the activities designed using the local environment. Trivial preaching is hardly found in the book. The pedagogical principles followed indeed would make learning exciting and meaningful. Thus, content does not seem to be overloaded.
- **Teacher as a facilitator:** The textbook’s contents were written so that the teacher takes up the role of a facilitator or partner in the child’s learning. Hence, there are no prescriptions. Instead, probe, prompt, and co-partnering are emphasised. In addition, every chapter has a footnote that provides suggestions for the

teachers, clarifying teachers roles and expectations of the outcome of the activities.

### **Addressing diverse needs of students**

1. Inclusive perspective: Most of the time, the contents were inclusive—gender neutral or giving equal representation and considering the socio-cultural, economic and other aspects.
2. Adaptability: The textbook caters to individual differences, addressing rural and urban students, non-controversial treatment of all the topics, and seeing that content fits nicely into the curriculum and the needs of the communities.

The book encourages multiple perspectives to accommodate the learners and their learning.

### **Organisation of the content in the chapters**

1. Approach used: Thematic approach is reflected; the chapters revolve around the six themes. The chapters are graded based on the difficulty level of the content. The content in a chapter is linked and has a balance between the latest advancement and historical and social significance. Content is accurate and updated and there is no ambiguity in its presentation.
2. Length of the chapters: Some chapters are too long, and a few are too small; for example, “A beautiful cloth” runs into two pages and “Web of life” into three pages. Nevertheless, a balance can be maintained in the conciseness of the chapters.

3. Horizontal and vertical linkages: The content included is according to the syllabus and is adequate with respect to the students prerequisite knowledge. The concepts are arranged in a sequence in all the chapters but still can be appropriately linked. However, the chapters in the textbook are not sequenced properly and they are not logical. For instance, after the chapter “It is raining,” the chapter “what is cooking?” is placed. (horizontal and vertical linkages in characterisation have to be checked).

### **Integrated assessment**

There are many exercises and activities with questions and in-text questions in a chapter, but no assessment questions as such at the end of the chapter. In some chapters, there are extended activities or learning at the end of the chapter and they are exciting and motivating. Projects, assignments, worksheets and activities directly lend the book to continuous comprehensive assessment.

### **Textbook development committee**

This committee included teachers, lecturers from the Centre for Environmental Education, and the Education Department. Experienced teachers and their insights indeed are reflected in the activities of the textbook, making it exciting and updated.

### **Linkage with learning outcomes**

Overall, the textbook provides scope and opportunities to develop competencies if the teachers carry out all the activities involving all the students that are stated in the learning outcomes (NCERT, 2017):

- identifies simple observable features (shape, colour, texture, aroma) of leaves, trunk and bark of plants in the immediate environment;
- identifies simple features (movement at places, eating habits, sounds) of animals and birds in the immediate surroundings;
- identifies relationships with and among family members;
- identifies objects, signs (vessels, stoves, transport, means of communication, signboards), places (types of houses/ shelter, bus stand, petrol pump), activities (work people do, for example, cooking) at home, school and neighbourhood;
- describes the need for food for people of different age groups; animals and birds, availability of food and water, and the use of water at home and in surrounding;
- describes roles of family members, family influences (traits, features, habits practices), and the need to live together through oral, written and other ways;
- groups like objects, birds, animals, features and activities according to similarities or differences using different senses (appearance, place of living, food, movements, likes or dislikes).

### **Physical features of the textbook**

The design of the cover page is appropriate and attractive. The size and shape of the book are handy and appropriate with good and long-lasting binding. The paper, print and binding of

the book are attractive but can be made better. The printing and font size used in the textbook is legible and reader-friendly. Colour pictures made the book more appealing to the students.

### **Suggestions to improve the textbook development**

- The lessons objectives may be explicitly given at the beginning and learning outcomes at the end of the chapter.
- There is no introduction and conclusion in the chapters. Instead, a summary is given at the end of the chapters, which helps the students revise the lesson.
- The textbook gave more weightage to theme 1, family and friends when compared to the other themes. Balance can be maintained in several chapters in this regard and also the length of the chapter in the textbook can be made more akin.
- It is highly appreciated how the activities are designed, but the activities in a chapter need to be appropriately linked. Chapter is a journey in which a child acquires knowledge, abilities, skills, attitudes, etc. Thus, the activities have to lead to one another in continuity. For instance, activities in the chapter "Food we eat" and the chapter "Saying without speaking" need to be appropriately linked or lead to one another.
- In the chapter titled "Families can be different," case studies are used where relationships and names are not appropriate, like *Nana* in Tamil. Actually, *Nanna* is used in Telugu for father, not in Tamil.

- It would be better if some assessment questions in line with learning outcomes were given at the end of each chapter so that the students can check their understanding of the chapter.
- As pictures and figures captivate the attention and clarify the concepts, they can be made clear, more attractive and colourful than what they are in the present text.
- Guidance on how to make classes inclusive may be provided to teachers as, in most cases, the teachers are not aware.
- A separate handbook for teachers can be made along with the textbook with additional resources, recording and reporting assessment.
- Any textbook can be implemented effectively only when the implementers have a thorough understanding of the philosophy, purpose and characteristics

of the textbook. Thus, the teachers must be adequately oriented before it is implemented.

## Conclusion

The Environment Studies textbook of Class III is child-centred, user friendly and is designed to develop environmental consciousness among the students. It has taken proper balance in the overall development of children, that is, in cognitive, affective and psychomotor domains. Any textbook will not meet the objectives unless and until it is used by the teachers and students the way it was meant to be used. The stakeholders must understand the philosophy behind while developing it, if we wish to see the maximum utility. For this, teacher support materials can be developed along with it and supplied to teachers in time. The teachers are expected to use them to bring in qualitative changes in the teaching-learning process.

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