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## **Analysis of Environmental Education Components in the Existing Textbooks from Class V to VII, Developed and Adopted By the State Council of Educational Research and Training, Assam**

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### **Abstract**

*The present investigation was undertaken to analyze the Environmental Education Textbooks prepared by S.C.E.R.T. Assam, at the elementary level for class v to vii. The content analysis was conducted by investigator himself. The investigator had collected all the existing textbooks both in English and Assamese medium, prescribed by the SCERT, Assam from classes V to VII. The investigator studied the content material thoroughly giving focus on environment related topics in relation to curriculum on environmental education. The result of the study revealed that the Contents on Environmental Education are not sufficient for fulfilling all the objectives of Environmental Education in the schools. In different textbooks i.e. language, science and social science, the stress is given only on enriching the cognitive abilities of the students. Objectives of affective and psychomotor domain have been reflected partially.*

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**Introduction:** Environmental Education is a process of recognizing values and clarifying concepts in order to develop skills and added tools necessary to understand and appreciate the inter-relationship among man, his culture and his bio-physical natural environment and man-made environment are interdependent. It should consider the environment in its totality and should be a continuous lifelong process beginning at the pre-school level and continuing through all stages. It should be interdisciplinary and examine major environmental issues from local, national and international points of view. It should utilize various educational approaches to teach and learn about and from the environment with stress on practical activities and firsthand experience. It is through this process of education that people can be sensitized about the environmental issues.

Environmental education is education through, about and for environment. It is both style and subject matter of education. Style is concerned with an approach to education while subject matter or content is concerned with teaching about the components and constituents of environment.

In Assam, the curriculum on Environment Education was developed according to the direction of the National Policy on education, 1986 and Honourable Supreme Court, where environmental education dimensions have been more strongly integrated in the curriculums and Textbooks at all levels.

Despite various components of Environmental Education (EE) having been incorporated and integrated into school Textbooks, there is lack of evidences how these various components help the

teachers and students, are there any weaknesses in the Textbooks, whether the guidelines of the curriculum are properly followed in textbooks. Since no such comprehensive study has been undertaken so far, a need was therefore felt by the investigator to analyze the environment education contents in the text books.

It was hoped that such a study will throw much light on the shortages and weaknesses of the ongoing EE textbooks and will help textbook writers and practicing teachers for effective implementation of this significant and noble scheme in the near future.

**Need for Content Analysis:** With a view to effective integration, it is necessary to analyse the contents of the textbooks from Class V to VII, prepared by SCERT, Assam. In order to review the adequacy of integration of various components of Environmental Education in school textbooks from Class V to VII, a need was felt to analyse the textbooks.

It is expected that the authors have tried to integrate different components of environmental education in the textbooks of Language, Science and Social Science. Though the effort is good, but till now no comprehensive study has been reported on how far the integrated approach helps the learners to acquire the concepts and ideas of environmental education. Therefore it is expected that a comprehensive study on this aspect definitely help for further improvement and addition of Environmental Education components in the textbooks at elementary level schools of Assam.

#### **Objectives of the Paper:**

- [i] To analyze the distribution of environmental education elements in the existing textbooks of science, social science and language at the elementary level, developed and adopted by SCERT, Assam, from Classes V to VII.
- [ii] To make recommendation for adequate and effective integration of Environmental Education into school textbooks of SCERT, Assam from Class V to VII

**Methodology:** The content analysis was conducted by investigator himself. The investigator had collected all the existing textbooks both in English and Assamese medium, prescribed by the SCERT, Assam from classes V to VII. The investigator studied the content material thoroughly giving focus on environment related topics in relation to curriculum on environmental education.

Seven textbooks were analysed which are in use from Class V to VII. During the analysis of the textbooks, importance was given to find out whether:

- i. The contents related to the Environmental Education are integrated in the textbooks of relevant subjects at V, VI and VII standard in relation to curriculum.
- ii. The integrated contents are adequate enough to enable students of Class V, VI and VII to acquire knowledge on Environmental Education.
- iii. The treatment of content in the textbooks may promote interactive experimental learning and provide opportunities to students for participating in activities focused on life skill development.

#### **Distribution of Environmental Education contents in the different textbooks of Class V**

The subject wise analysis of textbooks at Class V presents the status of Environmental Education elements as follows–

- Environmental Education contents are integrated in the textbooks of Social Science, Ucha Prathamik Bigyan and English, (Marigold.)
- A story on ‘WONDERFUL WASTE’ is given in the Unit- I where Environmental Education related message is reuse of waste.
- In the subject, Social Science, some elements on Environmental Education have been integrated in the lesson- 4 (EARTH’S ENVIRONMENT). The Environmental Education

contents of this lesson are– what is environment, elements of environment, physical and man-made environment, relationship between the elements of environment, close relation among the elements of natural environment. In the lesson- 6 (LOCAL GEOGRAPHY) few lines are integrated on decreasing of ‘Ou’ trees due to increase of population and use of trees as fuel-wood for cooking. In the lesson- 7 (GEOGRAPHY OF A TOWN), some important elements related to environmental problems and its causes particularly in the town area are integrated. Environmental problems integrated in this lesson are– water logging problems, traffic jam, open space is getting reduced, soil and bank erosion. The causes of these problems are– increase of population puts tremendous pressure on the limited land and resources, human settlement are getting extended to the hills and hollas.

- In the subject Uchha Prathami Bigyan, some Environmental Education elements are integrated in the lesson- 2 (NATURAL RESOURCES OF THE WORLD). The integrated elements are renewable and non-renewable resources, their differences, their uses, importance of forests, conservation of forest, water– its importance and uses, conservation of water.
- Contents integrated in the textbooks are free from factual error and spelling mistakes.

**Gaps found:** Contents on ” We and Our Surroundings” and ”Economic Environment and We” cover more space than the other components of Environmental Education. Contents related to Air Pollution and We, Water Pollution and We, Soil Pollution and We, find space in the science and social science textbooks. Contents related to Agriculture and we, Individual & environment, Family and environment, Society and environment, Religion, Rites, Rituals, culture and environment, Health & Environment, Environment & Laws, Sound, heat and light in environment and Disaster and We, do not find any place in the textbooks at this stage.

- In the Social Science textbooks, though there are many scopes to integrate the important environmental education elements, but it is observed that the authors had not given due attention on environmental education issues. In the lesson- 5 (MEANING OF GEOGRAPHY), detail descriptions of lithosphere, hydrosphere and atmosphere have been given. In the chapter, the author could have integrated some important elements on environmental education.
- In the chapter ‘LOCAL GEOGRAPHY’, the authors mentioned regarding increase of population, deforestation and use of fuel wood for cooking in just few lines. Actually, description of environmental education elements in just few lines, one or two paras or pages will not serve the purpose of the environmental education. In this chapter though the author is mentioning about the use of fuel-wood for cooking but the pollution caused by this activity is not mentioned.
- The textbooks of languages besides those of Science and Social Science have enough potential for incorporating environmental education contents. But, from the above analysis it is seen that in the subject English, just one chapter is given on ‘Wonderful Waste’.
- The treatment of the contents in the textbooks should not only aim at enabling students to acquire knowledge about these concerns but also at inculcating positive attitude and life skill development. The lessons, therefore, should provide learners ample opportunities to involve themselves in interactive experimental learning process.
- From the above analysis, it is clearly observed that the integration of environmental education contents in the textbooks of Class V is very limited. Very important problems of environment in the present day context are completely neglected. Integration is not in the proper way.

Many scopes are available in the textbooks, but, the author could not take the opportunity of the scopes.

- Style of writing and introducing a new concept to the learner is not attractive.
- It is observed that the most of the contents are not related with daily life of the student.
- Students' activity and project assignment are totally absent in the textbooks.

### **Distribution of Environmental Education contents in the different textbooks of Class VI**

- In Class VI, Environmental Education elements are integrated in Social Science and Science textbooks. In Social Science textbook, the Environmental Education contents are integrated in three lessons– [i] Lesson- 4 (Major Domain of the Earth p 33–44), [ii] Lesson- 7 (Assam: Climate, natural vegetation, wildlife and agriculture p 55–67), [iii] Lesson- 18 (Need of a quality life p 139–144).
- The Environmental Education contents integrated in the lesson- 4 are– Water pollution, top soil erosion due to felling of trees and cleaning of land for agriculture, air, land and water pollution due to construction of houses, factories and dams, disturbances of natural balance between different elements and biosphere, cause of global warming, careful in using the resources for maintaining the balance of the nature.
- The Environmental Education contents integrated in the lesson- 7 are– Importance of vegetation in controlling pollution in the atmosphere, restricting soil erosion and conserving soil moisture and increase soil fertility, conservation of vegetation and wildlife, ecological balance has been disturbed due to irrational activities of human being, if the illegal activities like– cutting of trees, killing of animals for skin and horn, picking up of ornamental fishes and aquatic organism are unchecked the whole ecological balance will be greatly disturbed and may go beyond repair.
- Environmental Education contents integrated in the Lesson- 18 is pollution free environment.
- In the Science Text Book, the Environmental Education contents are integrated in two lessons-(i) Lesson-14(Water p. 134-146) and (ii) Lesson 16(Garbage in, Garbage out).
- The Environmental Education contents integrated in the Lesson 14 are – How we can conserve water, increasing population and industries increased water consumption, rain water harvesting.
- The Environmental Education contents integrated in the Lesson-16 are affects of plastics, storing food in plastic bags may cause health problems, careless throwing of plastic in the roads and drains may create flood like situation during heavy rain.

**Gaps found:** Contents related to Water Pollution and We, Health & Environment cover more space than the other components of Environmental Education. Contents related to Air Pollution and We, Soil Pollution and We, We and Our Surroundings and Economic Environment find space in the science and social science textbooks. Contents related to Agriculture and we, Individual & environment, Family and environment, Society and environment, Religion, Rites, Rituals, culture and environment, Environment & Laws, Sound, heat and light in environment and Disaster and We, do not find any place in the textbooks at this stage.

- In the Class VI textbook of Science and Social Science, very low weightage has been given in Environmental Education components. Weightage given in textbooks are not according to the guidelines in the curriculum.
- The textbook writers have given less emphasis in integrating the Environmental Education contents. They are emphasizing in awaring the environmental problems and how it occurs but they are giving less importance on after affects of these problems and precautionary measures.

- Textbook writers have given maximum burden to the teachers. They have integrated the contents in few lines, one or two paras or maximum 2 pages.
- The language textbook do not possess any content on Environmental Education.
- Very less emphasis is given in the textbooks for developing attitudes and life skills.
- Activity / Project are totally not observed in these textbooks.
- No local specific environmental problems reflected in the textbooks.

### **Distribution of Environmental Education contents in the different textbooks of Class VII**

- The Environmental Education elements are integrated in two textbooks of Class VII i.e. Science and Social Science.
- Environmental Education contents in Social Science textbook are available in 5 Lessons– in Lesson 4 (Our Environment), Lesson 5 (Man made Environment), Lesson 6(Resources), Lesson 7 (Resources of Assam) and Lesson 9 (Climate, Natural Vegetation, agriculture and Population of India). The Environmental Education contents integrated in these five lessons are - Concept of environment and its modification by human beings, components of environments– natural and man-made, meaning of ecosystem; man-made environment, components of man-made environment, environmental pollution, classification of natural resources, conservation of resources, measures– for conservation of water, for conservation of soil, for conservation of energy; wetland conservation; high population growth is a burning issue, growth of population causes environmental problems.
- The Environmental Education contents in Science textbook are available in 4 lessons– in lesson- 5 ‘Acid, bases and salts’, in lesson- 16 ‘Water: A precious resource’, in lesson- 18 ‘Waste water story’. The environmental contents integrated in these four lessons are– Excessive use of fertilizers makes the soil acidic, depletion of water table, reasons of depletion of water table– increase of population, increase of industries, agricultural activities ; water management– rain water harvesting; importance of forests, affects of deforestation- increase the temperature of the earth, cause floods, endanger the life and environment; alternative arrangement for sewage disposal, waste water treatment.
- No factual error and spelling mistakes have been observed.

**Gaps found:** Contents related to We and Our Surroundings, Health & Environment, and Economic Environment cover more space than the other components of Environmental Education. Contents related to Air Pollution and We, Soil Pollution and We, and Agriculture and we, find space in the science and social science textbooks. Contents related to Individual & environment, Family and environment, Society and environment, Religion, Rites, Rituals, culture and environment, Environment & Laws, Sound, heat and light in environment and Disaster and We, do not find any place in the textbooks at this stage.

- The textbook writers have not properly followed the curriculum. It is confirmed by the reflection of very less number of Environmental Education content in the textbooks.
- The NCERT has given full autonomy to the states to integrate the local specific environmental problems and examples in the textbooks for effective transaction. But, in Social Science and Science textbooks, no local specific problems and examples have been seen.
- Maximum emphasis is given in the natural environment and very low importance is given in man-made environment. But, in the curriculum equal weightage is given in both natural and man-made environment.

- An important component of Environmental Education which gets no place in Class VII textbook is disaster management. Assam is a land, which is very much prone to earthquake and flood. Precautionary measures are the only solution to these natural calamities. So, this particular content need to be integrated very urgently.
- In both the textbooks maximum emphasis is given in the knowledge part. The other part like developing proper attitude and skills are almost neglected. No project activity on Environmental Education is observed in the textbooks.
- The authors could have taken the advantage of language textbooks for integrating the environmental issues particularly the man-made environment.

**Conclusion:** Contents on Environmental Education are not sufficient for fulfilling all the objectives of Environmental Education in the schools. In different textbooks i.e. language, science and social science, the stress is given only on enriching the cognitive abilities of the students. Objectives of affective and psychomotor domain have been reflected partially. The content materials of the textbooks are not sufficient to make awareness of environmental problems and to solve them scientifically. The contents integrated in different subjects are free from factual errors and weightage given to the objectives of developing skills and attitude need to be increased. The textbook writers should be well trained, so, that they can take the full advantage of the scopes available in the textbooks and the integrated contents should highlight the objectives of the Environmental Education. More project activities need to be included in the textbooks. It will be better if more examples are given from learner's immediate environment.

Life skill development activities need to be more focused, delineating the process of conducting the activity appropriately.

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