

**ENVIRONMENTAL EDUCATION AT PRIMARY LEVEL  
(CLASS III-V) CURRICULUM IN BANGLADESH: A CASE  
STUDY ON THE REFLECTION OF ENVIRONMENTAL  
EDUCATION ON CHILDREN'S KNOWLEDGE AND  
ENVIRONMENTAL ATTITUDE**

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**Abstract:** This study attempts to review the National Education Policy, Primary level curriculum and textbooks (Grade III-V) in consideration of environmental education to evaluate the knowledge level and environmental attitude of children. Environmental education is a holistic approach to foster environmental sensitivity, responsible environmental behavior and promote sustainable development. Both qualitative and quantitative approaches have been followed for the study purpose. The national education policy and primary level curriculum have been reviewed for document analysis. To evaluate the knowledge level and environmental attitude of the children a questionnaire survey was done and students were informally interviewed. About 120 students were selected from urban and semi-urban area of Dhaka district purposively. The result shows that the knowledge level of the students of urban area is better than the students of semi-urban area. But in the context of environmental attitude the performance of both categories were not satisfactory. However, the textbook and curriculum analysis shows that, few concepts are not connected vertically and horizontally. It might have triggered rote learning. Contents can be presented in a more interesting way with familiar words for children. Teachers can provide a stimulating environment for children with appropriate suggestion so that the child's understanding can be extended far beyond. This is high time "The national education policy" to be reviewed by the concerned authority and included some more specific objectives on environmental education for primary level curriculum.

**Keywords:** Environmental Education, National Education Policy, Curriculum, Environmental Knowledge, Environmental Attitude

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## INTRODUCTION

Environmental education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action (UNESCO, Tbilisi Declaration, 1978). Various research states that environmental education can play a vital role in facing the environmental challenges. For this purpose environmental issues should be incorporated in the curriculum of school education.

Bangladesh is a small country with extra-large population burden. Human induced pressure on demand for housing, production of food, health and hygiene- leads to tremendous stress on environment and inorganic resources like land, water and air. As a result, environmental issues have become major concern in the last few decades in Bangladesh. So, environmental education is inevitable for the people of this country for a sustainable development. The government has incorporated environmental education in the curriculum and few broad objectives on environmental education were stated in the National Education Policy. Primary level education is the main focus of attention because of the inherent flexibility in curricula to infuse environment into existing subjects and the higher level of enrollments in primary schools compared to secondary schools. (Sharmin, 2003). The students of primary level are capable of receiving any kind of knowledge and curiosity and creativity can be nurtured in them. Considering the issue, students of primary level can be provided with environmental knowledge to develop their knowledge and prepare them as an environmentally sensible and aware citizen for sustainable development. The results of the study will provide information about present status of environmental education in Bangladesh, knowledge level and environmental attitude of the primary level students of urban and semi urban area.

## OBJECTIVES

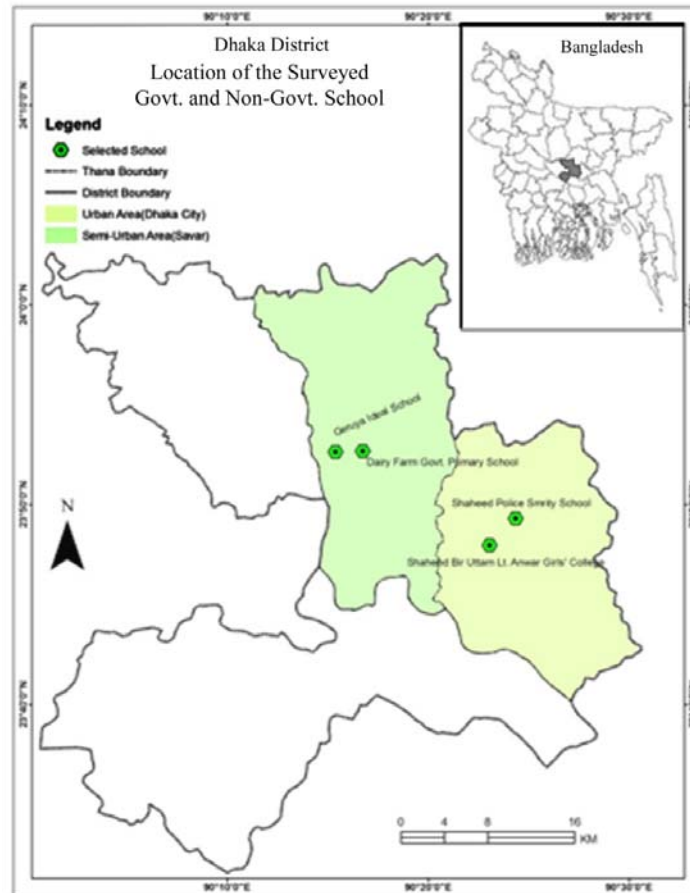
On the basis of the research questions the researchers have listed the following research objectives:

- To review the Education Policy of Bangladesh (2010) and existing curriculum of primary level (class III-V) in consideration of environmental education to assess the reflection on textbooks and learning outcome.
- To review the textbook of “Elementary Science” and “Bangladesh and Global Studies” (Class III-V) for analyzing the key concepts related to environmental education.

- To evaluate the knowledge level and environmental attitude of primary level students' under the present curriculum and teaching method.

### STUDY AREA

Dhaka district was selected as the study area and proportionate numbers of government and non-government schools were selected on purposive basis. The researchers selected 2 schools in urban area & 2 schools in semi-urban area for the study (Figure-1). The 2 urban schools, Shaheed Police Smrity School, Mirpur ( $23^{\circ}47'27.29''N$ ,  $90^{\circ}23'34.28''E$ ) and Shaheed Bir Uttam Lt. Anwar Girls' College, Dhaka ( $23^{\circ}47'58.94''N$ ,  $90^{\circ}23'4.59''E$ ) are situated mid-north side of the Dhaka Metropolitan. The 2 semi-urban schools, Dairy Farm Govt. Primary School ( $23^{\circ}52'41.39''N$ ,  $90^{\circ}16'45.28''E$ ) and Geruya Ideal School ( $23^{\circ}52'38.23''N$ ,  $90^{\circ}15'24.97''E$ ) are situated at north side of the Savar Upazila.



**Figure 1:** Location of the schools surveyed

## DATA AND METHODOLOGY

Both primary and secondary sources of data have been collected for the study purpose. Therefore, for this study, the non-probability techniques including purposive sampling were used as sampling techniques. The researcher purposively selected 120 students from 4 schools in urban and semi-urban area of Dhaka district. For primary sources of data a questionnaire survey was conducted among the primary level (Class III-V) students according to their textbooks. During the survey, students are informally interviewed and the researchers closely observed their activities in schools.

Primary data collected from questionnaire survey were used to scrutiny the hypothesis that points hypothesis proved or not.

### *\* Hypothesis*

H<sub>0</sub>. The performance of urban-area students is no better than the semi-urban area students in consideration of environmental education.

H<sub>1</sub>. The performance of urban-area students is better than the semi-urban area students in consideration of environmental education.

To collect secondary data, the emphasis was given on the textbooks of primary level (Class III-V), primary level curriculum published by National Curriculum and Textbook Board, Education Policy 2010 published by the Government of Bangladesh and other research works related to environmental education.

### **Methods of Data Processing and Analysis**

First of all, the collected data were processed and database was prepared by SPSS software. The processing stage includes the editing, coding, classification and tabulation of collected data that are ready to analyze. The analyzing stage includes hypotheses testing and interpretation of findings through statistical tests of significance to determine the validity in which the conclusion is based on.

## RESULTS

### **National Education Policy, 2010**

Primary education possesses utmost importance in our national life. Primary education is the basis of building up a skilled citizenry and the path to include the whole population within the education system.

The primary objectives of this policy is directed toward the cultivation of human values. There are thirty clauses in the objectives of education in Bangladesh according to the education policy of Bangladesh. Environment related objective (objective no.18) is:

- *To build students as skilled human resources to fight the challenges of the world threatened by climate change and other natural disasters and to create in them a social awareness about environment* (National Education Policy, 2010)

After reviewing the primary education policy, it can be stated that, the policy included broad objective on environmental education. As the curriculum and textbooks are written to fulfill the aim and objectives of the education policy, so, more specific objectives on environmental education would be fruitful.

Policy included a paragraph on “Curricula and Syllabi” on the section of primary education:

“Policy Specific subjects such as Bangla, English, Moral Science, Bangladesh Studies, Mathematics, Social Environment, Natural Environment with emphasis on topics like climate change, Science and Information Technology are to be there in the syllabus as compulsory subjects for all students of diverse streams of primary education”. (NEP,2010)

On the cited paragraph, special emphasis was given to the issue of climate change. But the concept of “climate change” is an abstract idea for the student of primary level. Simplification of topics would be more effective. The emphasis should be given to infuse environmental knowledge in them so that they can be grown up to environmentally sensible and aware citizens.

### **Primary level curriculum**

The document analysis is suited to the fulfillment of the objectives of 1 and 2 of the research study. National Education Policy is a guideline of an education system. Textbooks are written in accordance with the instruction of primary curriculum, which is based on National Education policy documents. The National Curriculum for primary level (2012) indicates some objectives of teaching “Bangladesh and Global Studies” and “Elementary Science”. Such as:

- To develop knowledge about nature, environment and universe and active participation in environmental conservation,

- To inspire to participate in different social activities and learn about social rights and responsibilities,
- To develop knowledge about weather, climate, climate change and adaptation with climate change,
- To develop an understanding about basic human needs and negative impacts of overpopulation on environment

### Level of Environmental Education in terms of Contents

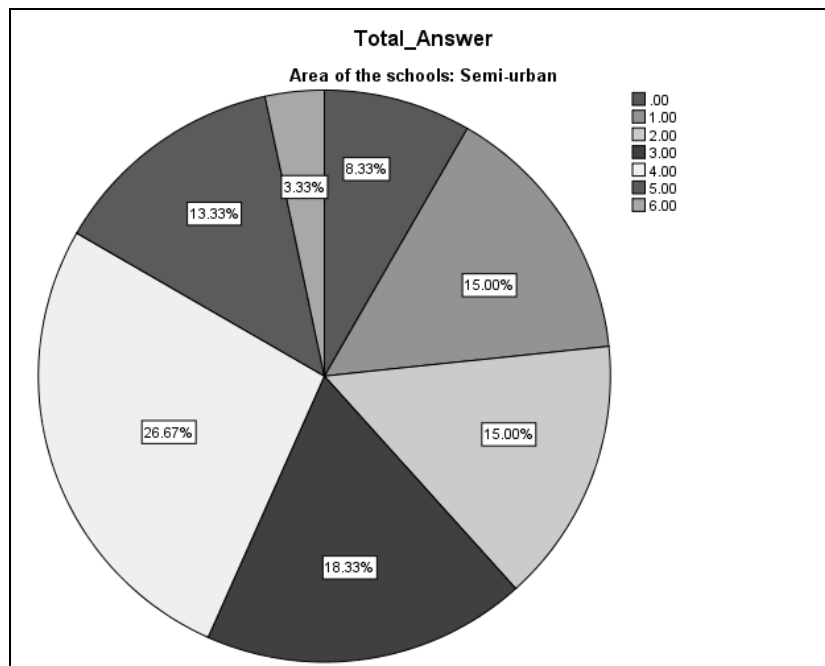
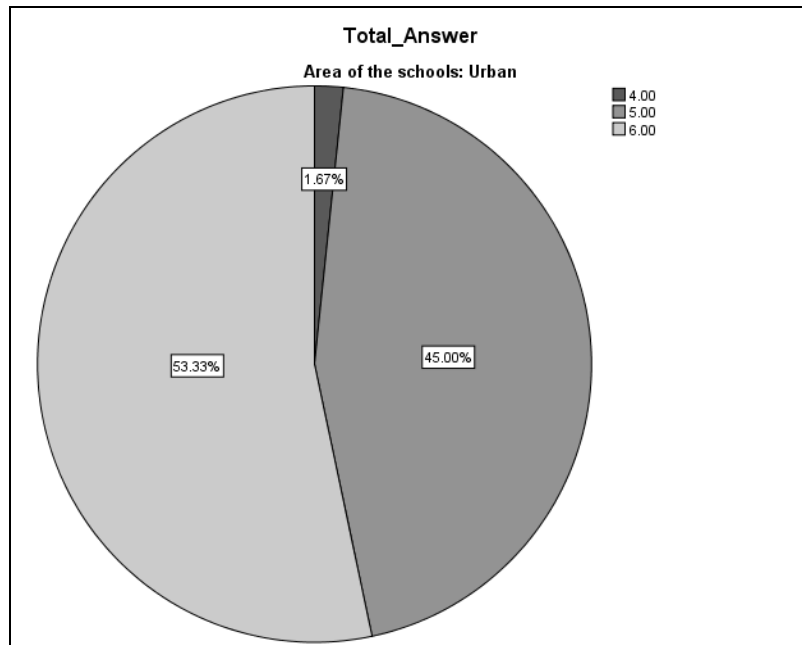
From the detailed content analysis of the textbooks of “Bangladesh and Global studies” And “Elementary Science” the number of environment related chapters can be ranged from low to high. Textbooks were ranged in Low (03), Medium (04-06) and High (07-above) in terms of environment related contents (Table 1).

**Table 1:** Level of Environmental Education in terms of Contents

| Name of Textbook              | Class | Level of Environmental Education in terms of Contents |                  |                 |
|-------------------------------|-------|---|------------------|-----------------|
|                               |       | Low (01-03)   | Moderate (04-06) | High (07-above) |
| Bangladesh and Global Studies | III   | √   |                  |                 |
| Elementary Science            | III   |   | √                |                 |
| Bangladesh and Global Studies | IV    | √   |                  |                 |
| Elementary Science            | IV    |   |                  | √               |
| Bangladesh and Global Studies | V     | √   |                  |                 |
| Elementary Science            | V     |   |                  | √               |

### Knowledge level of primary level (Grade III-V) students related to environment

Students of class III, IV and V were asked about their surrounding environment, to identify the components of environment (Class III) and to interlink the components of the environment (Class IV, V). This questionnaire was set on the basis of primary level curriculum as there stated that after going through these books they can learn about environment, components of environment and their interrelationship.



**Figure 2:** Environment related knowledge of the students (Urban and Semi-urban)  
On the basis of the total answer score obtained by the urban & semi-urban students the researcher determined a range which is given below in Table 2:

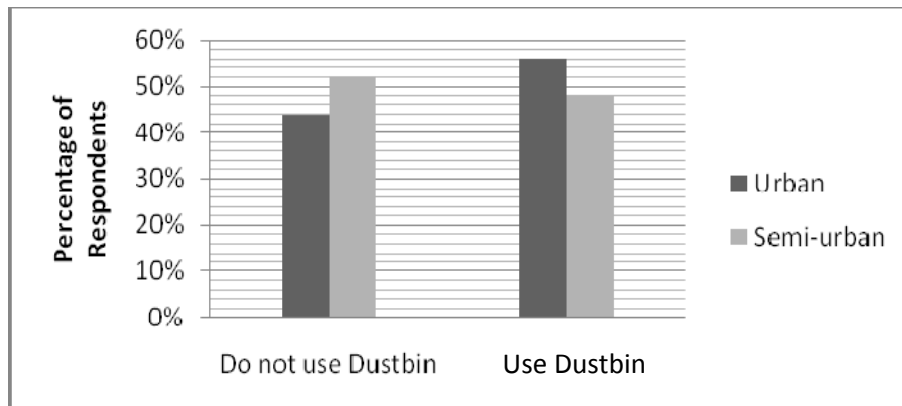
**Table 2: Performance of primary level students on Environmental Knowledge**

| Scale on the basis of score code | Rank    | Percentage |
|----------------------------------|---------|------------|
| <3                               | Poor    | <25%       |
| 3-4                              | Average | 25-50%     |
| >4                               | Good    | >50%       |

In the above pie-charts (Figure 2), the performances of the students about environmental knowledge level are shown.

### Environmental Attitude of the Students

Students were asked about where we should dump the garbage, most of them replied in the dustbin. But when they were observed during their school period they were not practicing the knowledge (Figure 3). In the urban area, students use dustbin while they are in the school premise. But outside the school they usually don't get the chance to throw waste in a dustbin. On the other hand, in the semi-urban area fewer students are accustomed in using a dustbin. Most of the children follow the activities of adult people and sad but true, in our country the adult people don't seem to behave environmentally sensible and aware. Only textbook and academic knowledge is not sufficient to make children environmentally sensible and aware. The knowledge they acquire in school need to be practiced in real life.



**Figure 3:** Awareness level of the students in primary school (urban and semi-urban)

### Hypothesis Testing

For testing the hypothesis researcher used chi-square test by using SPSS software.





The model contained five independent variables (Qus\_02, Qus\_03, Qus\_04, Qus\_05, ques\_01\_bad, ques\_01\_good (Table 4). The full model containing all predictors was statistically significant,  $\chi^2(6, N = 120) = 111.369, p < .001$ , indicating that the model was able to distinguish between performance of the Urban & Semi-Urban students.

## DISCUSSION

The National Education Policy, 2010 is the first education policy that has been put into implementation after the thirty-nine years of independence of our country. The overall responsibility of management of primary education in Bangladesh lies with the Ministry of Primary and Mass Education (MOPME), set up as a Ministry in 1992. While MOPME is involved in formulation of policies, the responsibility of implementation rests with the Directorate of Primary Education (DPE) headed by a Director General. The responsibility of managing environmental education falls under the jurisdiction of the Ministries of Education, Ministry of Education and Ministry of Environment and Forest of Bangladesh have introduced some innovative practices regarding environmental education. Such as: The national Education Policy and National Plans have emphasized the importance of environmental education and Grades 3 to 5 have courses in Environmental studies (Society) and Environmental studies (Science). Teachers' guides have been developed for those courses. Environmental education related objective that has been included in the NEP of Bangladesh is "*To build students as skilled human resources to fight the challenges of the world threatened by climate change and other natural disasters and to create in them a social awareness about environment*". To fulfill this objective is undoubtedly a demand of time. But in a developing country like Bangladesh where the literacy rate is only 59.82(BBS, 2010) demands more specific objectives regarding environmental education. Policy implementation at primary level education must be emphasized.

Textbooks are written on the basis of instructions given in the curriculum. Primary level curriculum includes instruction for grade 1 to 5. Environmental themes are infused in grades 1 and 2 and are integrated in grades 3-8. The National Curriculum for primary level (2012) indicates some objectives of teaching "Bangladesh and Global Studies" and "Elementary Science". Such as: to develop knowledge about nature, environment and universe and active participation in environmental conservation, to inspire to participate in different social activities and learn about social rights and responsibilities, to develop knowledge about weather, climate, climate change and adaptation with climate change, to develop an understanding about basic human needs and negative impacts of overpopulation on environment. On the basis of these objectives the contents of textbooks are determined. Directions for

key concepts, learning outcome, teaching method, planned activities are listed in the primary level curriculum. After content analysis of textbooks (“Bangladesh and Global Studies” and “Elementary Science”) it can be stated that few concepts are not connected vertically from grade 3 to 5. As the learning process is like a journey, so there should be connectivity in the key concepts. It is also noticed that the terms “climate change” and “adaptation to climate change” these are too early for this stage of learning. If the books provide mere information and knowledge, it may push them to rote learning. Abstract knowledge is of no use for a child. Simplification of concepts may help them to develop their knowledge level.

To evaluate the knowledge level of students a questionnaire was prepared based on their textbooks. About 120 students from schools of urban and semi-urban areas were selected for questionnaire survey and unstructured interview. For question no. 1, the percentage of good performance by urban students is 63.33% whereas for semi-urban students it is only 10%. Overall good performance by the students of urban area is 98.33% whereas in semi-urban the percentage is only 16.66. About 45% of the students from semi-urban area gave average performance and 38.33% gave bad performance on environment related knowledge.

Researcher has also observed students’ environmental attitude and awareness during their school period. When they were asked about throwing waste, most of them gave the right answer. But when it comes to their daily life, they do not practice what they have learned. For instance, 44% students of urban area and 52% of semi-urban area students do not throw waste in the dustbin.

Chi-square test was performed to test the hypothesis. Calculation (Table 3) indicated that null hypothesis is rejected and alternative hypothesis is accepted. That means, the null hypothesis  $H_0$  (The performance of urban-area students is not better than the semi-urban area students regarding environmental education.) is rejected in favor of the alternative hypothesis  $H_1$  (The performance of urban-area students is better than the semi-urban area students regarding environmental education).

Logistic regression allows testing models to predict categorical outcomes with two or more categories and allows us to look at the fit of the model as well as at the significance of the relationships (between dependent and independent variables) that we are modeling. Here, direct logistic regression was performed to predict the performance of the Urban & Semi-Urban students in different questions. This is prominent from the result that, urban students are more advanced in environmental knowledge than the semi-urban students. Nevertheless, a major number of students cannot relate their knowledge to the real world.

## FINDINGS AND CONCLUSIONS

This research mainly focused on assessing the present status of Environmental education at primary level students. The implementation of the first ever education policy in Bangladesh is undoubtedly a big step in the education system. More importantly, this policy includes objective on environmental education, which clearly shows it's reflection on the curriculum and textbooks also. The textbook of "Elementary science" and "Bangladesh and Global Studies" included various issues on environment. In some cases, the contents of the textbooks fail to connect the students with horizontal and vertical up gradation. These textbooks are full of information and sometimes the terms are hard for their understanding level. Nevertheless, the environmental knowledge, skill and attitude of the students vary from urban to semi-urban area. Lack of equal facilities, teaching method, lack of motivation, inadequate practical knowledge and skill may have been the reason behind it.

Environmental education is necessary to foster environmental sensitivity, responsible environmental behavior and promote sustainable development. Researchers working on the same context have agreed that, environmental education could be a potential teaching approach for all teachers as a way of developing the whole curriculum by integration of a wide range of topics and activities so that they could connect the learners with their environment, community, society to bring out the sensible and responsible citizenry. For building a more sustainable future, there is no alternative to Environmental Education. Concerned authority of the Government may consider the concept of including more specific objectives about environmental education on National Education Policy and Primary level Curriculum. Conceptual knowledge should be emphasized in textbooks rather than only facts and principles. Besides, study tour, sight-seeing, observation, exhibition, demonstration etc. would be effective for building awareness, environmental attitude, knowledge as well as skills among the students. Exploratory and hands-on activities are effective to acquire cognitive and psychomotor skills through observation, classification, inference etc. So children should be engaged in this type of activities. Last but not the least, equal facilities and learning materials should be provided in urban, semi-urban and rural areas. Standard teaching method should be ensured and training on environmental education for teachers should be compulsory.

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