Creating Environmental Awareness among Children: Swachh Bharat Mission Perspective

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ABSTRACT

Under Swachh Bharat Mission numerous initiatives were taken by universities, colleges, schools and other government agencies. One such initiative taken up with school children of class III and V is discussed in this paper. Every individual needs to understand why cleanliness is important. Cleanliness is a value which can be developed by continuous engagement with the individuals by challenging their existing notions / ideas in mind. Cleanliness is a habit. Habit formation begins at very early age in our lives. Children were sensitized about environment awareness and its cleanliness by using small activities in classroom like observing school garden, growth pattern in plants in school kitchen garden, reuse the paper, recycle pencil’s shavings, theatre and role play. This research on class III and class IV children clearly showed that environmental consciousness and environmental awareness can be developed among primary school children. It was also found that among these primary school children, one of the most common reasons for littering is unavailability of garbage bin at appropriate places in schools. However, the role of school is limiting as school is located in the larger social context, thus society at large needs to build awareness and sensitivity for ‘Swachh Bharat Mission’.

Keywords: Environmental awareness, Primary school children, Building sensitivity, Role of school, Habit formation

INTRODUCTION

Swachh Bharat Mission is a campaign of Government of India to keep the country clean. It was started by our respected Prime Minister on Oct 2, 2014. Under this mission numerous initiatives were taken by universities, colleges, schools and other government agencies. There are wide spread awareness created by newspaper report and social media. Inspite of that we come across news like the one mentioned in Box 1(an excerpt from the news item). It is cited that more than three fourth of population dispose garbage on road side. There are two questions to think about. One, Are such news items creating awareness among people? Two, Is awareness sufficient and necessary condition to act upon? These questions although important but there is no doubt that awareness is the first step.

Wadhwa and Kalyani (2012) citing the objectives of Environment Education mentioned that awareness is the first step in any environment issue. At this step sensitivity and awareness is built among individuals and society about the environment and problems or issues related to it. For instance, regarding noise pollution one needs to understand what it is and how harmful it is? After awareness one needs to have knowledge about the issue concerned. One needs to understand what is audible range for human ears?: What is the difference between loud voice and noise?: What are health hazards from noise?: how noise can be controlled?: How are humans causing this problem? After that attitudes must be developed in

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individuals. Development of attitudes or value formation among individuals takes time. It is not a onetime process. One must be reminded again and again.

To elaborate it further, when individuals are in process of value formation, they understand that it is good to keep your neighborhood and surrounding clean, but there may not be clarity on how to do it. And also, the existing infrastructure may not be supporting the value formation. Individuals may not know where to dump their garbage in absence of dustbins. The next level is to develop skills among individuals. The final step is the participation of individuals and social groups by developing a sense of responsibility and urgency regarding environmental problems, thus ensuring an appropriate action to solve those problems. One may able to act upon, segregating garbage as wet or dry; or as recyclable or non-recyclable; or as dangerous like toxic waste from factories or even nuclear waste from laboratory. To act begins with awareness and attitudes.

Cleanliness is a habit. Habit formation begins at very early age in our lives. Keeping this in mind, children in primary classes were sensitized about environment awareness and its cleanliness by using small activities in classroom. Children in primary classes those i.e. from 5 years to 10 years are too young to comprehend complex environmental issues. However, in the syllabus for elementary classes (NCERT, 2005)² there is no separate school subject on Environment. Environment Studies in the primary classes is taught as an integrated subject area which draws upon insights from sciences (physics, chemistry, and biology), social studies (history, geography, civics (political science) and economics) and environmental education (protection and conservation). This approach in Environment Studies helps children to use the contents and methods of science and social sciences and environment to understand and solve environmental issues. It exposes children to the actual world they live in.

OBJECTIVES OF THE RESEARCH

The following are objectives of research:

- To develop sensitivity towards environment among primary school children
- To create environmental awareness among primary school children
- To grow and nurture seeds in school as a small kitchen garden

CONTEXT OF THE STUDY

A small action research was conducted for about 4 months in two Municipal Corporation Schools in the North West of Delhi. Schools are Utkrisht Vidyalaya MCD, BB Block, Shalimar Bagh, Delhi-110088 and Nagar Nigam Co-Education School, Rohini Sector 16, Delhi 110085. The study was conducted on 50 students from grade III and grade IV students (age 8-10 years) respectively. It was conducted during the school internship practicum of B.El.Ed. IVth year. B.El.Ed. (Bachelor of Elementary Education) is a four year integrated professional course in elementary teacher education. Most of children come from nearby area of Haidarpur Basti in Shalimar Bagh School and
slum areas in Rohini School. Children come from families where parents are manual / daily worker in construction sites and similar work.

**LITERATURE REVIEW**

A number of studies were conducted in the area of developing environmental awareness among children; assessment of teachers’ perception of environmental studies as a discipline and pedagogies utilized for developing environmental awareness. A few studies are listed in the section below.

Rafferty and Laird (2013)\(^3\) in their research laid emphasis on sustainable development which according to them is not a short term phenomenon but rather a lifelong education for making individuals, institutions and society aware of the concerns. They argued that people including school students should be made aware of their surroundings and challenges related with it. In their research project students were periodically assessed by using various approaches like project, field trip, investigation, etc. They also concluded that scientific skills, individual thinking, and peer learning were also developed in students which developing an understanding on sustainable development. Wadhwa (2006)\(^4\) in a small action research found that learning environmental studies becomes meaningful when it is conducted in actual settings. She found that when children were taken to fields to see various processes in rice cultivation like sowing, cutting, winnowing, thrashing etc, they were able to make sense better than children who studied through books. For instance instead of talking about how plants are grown, if school children Tarr (2013)\(^5\) found that the art based pedagogies were effective for teaching young children about the natural world. In the study it was found that several teachers incorporated art as a contest in their lesson plans and often made participation a regular part of the school year. The researcher concluded that art based activities helped students comprehend abstract scientific theories and improved their critical thinking skills. Ljunggren (2011)\(^6\) performed a study in a school of the South Africa where in they researched the role of school management in engaging with environmental issues and in promoting values, attitudes and lifestyles for sustainable development to its learners. In this field study school documents were analyzed and in-depth interviews with the school management and a questionnaire among the learners were carried out. And an evaluative study of four environment related projects were identified at school namely a recycling project, an environmental awareness club, a vegetable garden as well as indigenous garden and greening of the school was carried out. Kimaryo (2011)\(^7\) conducted a study in Tanzania on teachers’ perception about environmental concerns. It was found that there were variations in the perceptions of the primary school teachers. Most of them focused on the knowledge acquisition and not construction of knowledge as an objective of learning environment studies at school. However, according to Tanzanian education and training policy, there was no separate school subject as ‘Environment Studies’ but rather it was to be integrated into all other school subjects.

**METHODOLOGY**

It was observed that children litter a lot in classroom and in schools. Thus numerous activities were organized for sensitizing children about environment awareness including ‘Swachh Bharat Mission’. These activities were conducted in and outside classes III and IV either in groups, individual or the whole classroom. Interactions were children organized in each of the activities. The activities were linked to their school subject ‘Environment Studies’. For this subject, a textbook titled ‘Looking Around’ is prescribed in schools by the Government of National Capital Territory. The textbook is based on six themes – Family and Friends, Food, Shelter, Travel, Water and Things we make and do (Syllabus for Elementary Classes I – VIII, NCERT, 2006)\(^1\) with an objective to create environmental awareness and concern for justice and equality. It seemed appropriate to build the activities of Swacch Bharat Mission with the school subject. Harlen and Elstgeest (1992)\(^8\) recommended that certain skills are developed among children while learning of environment studies. These skills are observation, estimation, comparison, prediction, hypothesis formation, manipulation, measurement, experimentation and communication. These skills, if developed remain life-long with children. Realizing the importance of these skills it was ensured that through small activities skills are developed among children while learning of environment studies. The following are a brief description of activities organized during the four months of school internship:

**KEEPING THE CLASS AND SCHOOL CLEAN**

Children were encouraged to not to litter in class. A small dustbin was kept in class to throw waste paper.
At the same time, children were also asked to reuse paper for writing on the other side or for some craft activity. Another small box was kept for storing pencils’ shavings. Children utilized pencils’ shavings for craft activity. Figure 1, Figure 2, Figure 3 and Figure 4 are some samples of children craft activity using pencil shavings.

**Figure 1.** Sample of children craft activity using pencil shavings

**Figure 2.** Sample of children craft activity using pencil shavings

Children needed to be reminded again and again initially. But later, it became their habit. Some pictures of their work are shown here. The children used the pencil shavings for different shapes related to environment like shape of fruits, part of leaves besides other innovative drawings.

An activity on ‘Save Paper’ was organized for students where in they were asked to put waste/used pencil waste shavings.
paper in a box. And that collection of waste papers was used in the class during activities. It was found that children initially refused to use that paper. But gradually children started using it. It was like a cascade effect, one after the other and by the end of internship almost all of them were using papers from that box. However, there were a few 3-4 students who refused to recycle paper. For instance, a child said “It is already used and I cannot use it”; another student said, “I do not like to use already used paper”.

A discussion on 4 R’s of environment sustainability. These are Reduce, Reuse, Recycle and Refuse. It was discussed that we may reduce the items of our needs. One may buy fewer things. One may decide about things which are necessary for our use. Certain things can be reused like plastic and glass bottles and jars can be reused for some other purposes. Some other things like paper and cloths can be recycled. Some things like single use plastics – straws, spoons, polythene bags should be refused for environment sustainability.

Figure 4. Sample of children craft activity using pencil shavings

FIELD VISITS TO SCHOOL PARK

Within the school premises there were two parks – one is smaller in size, which is at front side of the school (Figure 5) and the other at the centre of the school. Field visits were organized to these parks regularly to observe plants, insects and other creatures; simultaneously children were asked to observe the cleanliness in these parks. Initially, students focused on the beauty of the Rose Park (front side) and cool breeze. Then they started observing different coloured roses and number of roses. But gradually they started observing minute changes like growing of a plant from sapling, flowering of a flower from bud and even growth of a new leaf (Figure 6).

Figure 5. Children on Field visit

Figure 6. Observations by children during field visit in the park
They also observed weeds and realized that another plant grew at the same place. They experienced and learnt from the nature. Cronin et.al. (2010)\(^9\) found that schoolyards become effective grounds for learning and developing awareness among children. Sezen et.al. (2006)\(^10\) also concluded from their research on Botanical Garden that field visits are effective in environmental learning.

Some interesting discussion points were raised in classroom: Parks should be kept clean and if it is not then what possible consequences are; the importance of growing plants around our environment whether it is school or home; children even cleaned the park by picking wrappers from the park and throwing in garbage bin; As part of their field visit they began by listing questions in the groups and by their observation and discussion after field visit they recorded responses to their questions. Some of the questions which were investigated during the field visit are: Which are different animals/creatures found in the park?; Which animals creep?; Which animals crawl?; Which birds come to that field?; Which are different plants grown there?; Which animal/bird/insect have made its home there? And how that home looks like?; Were there any other objects, stones, peels, seeds, fruits, paper bits or wrappers?

Students observed various flies and even a frog one day. And discussed among themselves about it, a student said, “Frogs often come out after rains only, another student added, “Peacock also loves rain, it dances and come out of forests after the rains”.

Such incidents showed that students learn a lot of things from nature.

**Observing Plants and Their Growth**

Children were divided in groups and each group identified its tree/plant within school complex. Children recorded their observations about how big the plant was (develop their skill of estimation and measurement); tree trunk (soft or hard); was trunk divided into branches or not; what’s the shape, size, colour, texture of leaves of the tree; Was it a flowering plant or not, if yes then how were the flowers (colour, shape, texture, fragrance, petals or any other); were any birds or insects live on the plant. Children worked on different trees namely Ashok, Neem, Peepal, and Shisham. In the other activity a suitable piece of land was identified in school and soil was prepared to grow seeds. Seeds of different plants like spinach, radish, coriander, mint, channa, wheat, carrot, fenugreek,
rajma, barely, moong and marigold were sown with the help of students in different pockets of the land. After sowing the seeds every day children came for observation of their field. They sprinkled water on the field and also made sure that there was no litter in and around their field. They prepared posters like ‘please do not pluck leaves/flower from the ground’ and ‘please do not litter’ and displayed in school. Observations of growth pattern of different seeds – in terms of length and no. of leaves were recorded regularly (Figure 7). The visit to the field had a pre-planning wherein children were sensitized towards what all had to be observed and recorded during the visit (Figure 8 and Figure 9). During field visit, children recorded their observations and had discussion post their field visit. The observations were quite similar to Aylward et.al. (1998)\textsuperscript{11} where in their action research on primary school children found that vermin-composting increased environmental awareness in children.

The growth pattern of different plants was recorded and was plotted on graphs sheets. Children not only learnt about the growth of plants but also learnt the processes involved in any scientific investigations namely – observation and recording, drawing comparison in terms of similarities and differences, communicating their findings, estimation, questioning, hypothesis formation and drawing conclusions. Children found that wheat and rajma gained maximum height; wheat, barley and chana were the first one to start germination; fenugreek and coriander were the last one to germinate (Figure 10). They also drew conclusion that if Peepal tree is sown along with these plants then it would have affected the growth of other crops. They also found out that we eat roots of carrot and radish and leaves of coriander and mint. Thus, different parts of plants are edible. Children from other classes were also curious about this kitchen garden. Initially, children needed to be reminded about not to spoil the nursery (kitchen garden). But later, it was one of the favourite activities for the entire primary school. It had become a routine of all teachers and children to observe the kitchen garden daily.

**Theatre in Classroom**

A few theatre activities were organized in classroom where in children were expected to enact a situation to entire class. It created opportunities for interaction among children. At the same time student’s implicit perceptions and attitudes were found out. For instance in an activity named ‘TERE MERE KAHANI’, (Figure 11) a small play was performed to find out the attitudes of children in a free and uncontrolled environment. Many students reflected an environment friendly behavior like, a student kept a wrapper in her pocket and when asked to her later she replied, “I will throw it later in the dustbin “. A discussion on ‘Swacch Bharat Abhiyaan’ was conducted and the whole class participated enthusiastically, many interesting responses came out during the discussion, like one boy Piyush said, “Swacch abhiyaan is about cleaning markets like Karol Bagh, I saw two peoples wearing Modi caps and cleaning the market”.

![Figure 10. Children recording plant variations and their characteristics](image1.png)

![Figure 11. Children participation in awareness activity in the class](image2.png)

Another student replied that “Swacch Abhiyan is related to 2\textsuperscript{nd} Oct, it means cleaning schools on Gandhiji’s Birthday”. Such responses showed that
children were aware of the campaigns in and around our school and society.

**ANALYSIS OF OBSERVATIONS**

When children were taken out to fields for observations, they observed specific and minute things/objects in the park. Lock (1998) also concluded that fieldwork has an important role to play in learning of life sciences. Their observations were precise and even recorded their observations. III class children, who were not good at expressing their ideas by writing, expressed it through their drawings. Children learned about plants, their growth patterns, tiny creatures living there and cleanliness. Thus, conforming to Piaget’s (1964) main idea in development and learning is that children best learn when they actively explore and rediscover and reconstruct knowledge.

Children also developed process skills in science namely observation and reporting (taking note of minute details in their environment and listing it), discussion (expressing their point of view and listening to other’s point of view and changing their opinion in case of an evidence), expression (articulating their ideas either through speaking, writing, drawing and acting), classification (draw similarities and differences among different objects/things), questioning (raising questions in order to satisfy their curiosity), experimentation (manipulate material, hypothesize formation and testing) and concern for justice and equality and co-operation (working with each other in groups).

A worksheet was given to students depicting different objects and was asked to encircle objects which create unpleasant sounds. It was found that many of them encircled alarm clock, bus, dog and even birds which implied that children relate pleasant and unpleasant sounds to their environment. In activity ‘My world’ students drew their home and surroundings and took initiative to clean their surroundings. The cognitive understanding of surroundings among children participants included all exposures from home to play ground. After the story students were asked to add anything in their drawing and encircle the things they would like to take away from their surroundings. Some of the responses from students were:

“It want to cover up and clean the drain near my house and cover up the big dustbin which is always overloaded”;

“I want to take away flies from my house”;

“We can throw garbage and cover the dustbin”;

“We can call MCD office to get it cleaned”;

“We can divide duties among ourselves to keep our surroundings clean”;

“We can talk to our families and stop them to throw garbage around”;

Such responses are clear indicator that after participating in activities for environmental awareness, children are sensitive about keeping environment ‘swachh’.

Another, important analysis emerged from these activities that such activities not only enhance observation and skill among children but these also provides insight for assessment (NCERT, 2008). Children were also suggested possible solutions and alternatives to the problems. Their responses indicated that they had a concern for environment and felt that keeping environment clear is everyone’s responsibility regardless of their age. Children showed positive responses in terms of being aware, being sensitive towards their environment and its cleanliness.

**CONCLUSIONS**

The formation of attitudes and values takes time. Only a continuous positive reinforcement turns these values into habits. Habit formation is a time taking process. This small action research on class III and class IV children clearly showed that environmental consciousness and environmental awareness can be developed among primary school children. It was also found that among these primary school children, one of the most common reasons for littering is unavailability of garbage bin at appropriate places in schools. Thus, the Swachh Bharat Mission is not only for adults, it is for everyone even for primary school children. The primary school children are well aware of their surrounding and are eager to participate in cleanliness programs. As observed by (Pascale, 2010) “we are more likely to act our way into new ways of thinking than thinking our way into new ways of acting”. However, the role of school is limiting as
school is located in the larger social context, thus society at large needs to build awareness and sensitivity towards ‘Swachh Bharat Mission’.

SUGGESTIONS FOR FURTHER RESEARCH STUDIES

This study was conducted on a small sample size and only in two schools which can further be supplemented by conducting an in depth study by adding more specific activities and by taking students into uncontrolled environment whereby researcher can become a participant or a non participant observer to their behavior. It would elucidate children’s natural instincts and effectiveness of the class room activities will be assessed more appropriately. Also, a checklist could be used to observe children’s action or changes in their behaviours on a regular basis. Also, multiple age groups of sample could also be considered to develop a comparative analysis and study on each age groups own understanding about the nature. The early learning, thus, would provide direction for understanding advanced future science.

NOTES

- At present the Bachelor of Elementary Education (B.El.Ed) programme is offered in eight girls colleges of University of Delhi, Delhi. Aditi Mahavidyalaya is one of the eight colleges.
- In the fourth and final year of B.El.Ed programme students are placed in schools for sixteen week long School Internship. During the internship periods students (Interns) teach and interact with a group of students.
- The action research activities discussed in this paper were drawn from the school internship experience of fourth year BElEd students – Smriti Chandhok and Priyanka Gupta of Aditi Mahavidyalaya, University of Delhi, Bawana, Delhi. Smriti Chandok was intern in the Utkrisht Vidyalaya MCD, BB Block, Shalimar Bagh, Delhi-110088 and Priyanka Gupta was intern in the Nagar Nigam Co-Education School, Rohini Sector 16, Delhi -110085.

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