

## Teacher's Perception and Practice About Nature-based Teaching at the Pre-primary Level

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### Abstract

*Young children learn about the natural world by interacting with it, teachers and other adults must attend to the frequency, nature, and the quality of interactions that take place between the children and the natural world during the early years. These days lives of children are much different as they have much lesser opportunities for outdoor free play and contact with the natural world on a regular basis. There are a number of factors which have shrunk their physical boundaries (Francis 1991, Kyttä 2004). Parents these days are afraid for their child's safety and a 'culture of fear' has set in. School and teacher's role is thus imperative in introducing nature to the preschool children. A study was conducted to find out the perception and awareness of teachers towards adoption of nature based education at the pre primary level. Purposive sampling technique was used to select the sample and data was collected with the help of a questionnaire, rating scale and observation schedule. A series of need based workshops creating awareness about nature education was conducted. Findings of the study reveal a positive change in the attitudes and practices of the teachers about natural environment education, on comparison of pre-test and post-test results. The results showed, an exceptional rise in the domain of emotional development, which further proved that, when children develop love for animals, plants, insects, birds and the environment they form a positive attachment to it. This emotional bond aids them in the learning process and thus, facilitates their overall growth or holistic development. Also it implies that the awareness and attitude of teachers can be augmented through intervention programmes. Inclusion of natural environment components in the preschool curriculum needs strengthening.*

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## Introduction

Natural education refers to acquiring of knowledge and sensitivity towards nature in a lifelong process beginning from preschool level and continuing through all the stages of life. It creates opportunities where children can have a direct experience with nature. Wilson (2002) suggests that the process by which young children learn about the natural world should begin before the kindergarten. The preschool years are considered crucial for developing the right knowledge and attitude. Children must develop a sense of respect and care for the natural environment during their beginning years of life or be at risk for never developing such attitudes (Stapp, 1978; Tilbury, 1994; Wilson, 1994). Early experiences with the natural world have also been positively linked with the sense of wonder. This way of knowing, if recognized and honoured, can serve as a lifelong source of joy and enrichment, as well as an impetus, or motivation, for further learning. However the ability to experience the surrounding environment and the natural world as a source of wonder tends to diminish over time (Wilson, 1997). So in the initial years it is important to spark the curiosity and wonderment of the natural surroundings.

People often assume that outdoor education must take place in semi-rural settings. However urban settings can also offer ways to spend time in nature outdoors. A small amount of exposure to nature really offers huge

opportunities. For example, urban teachers can plan a nature walk or a time to study clouds (Erickson, 2008).

Children's emotional and affective values of nature develop earlier than their abstract, logical and rational perspectives (Kellert, 2002). Rather than books and lectures, nature itself is children's best teacher (Coffey, 2001). Children have an innate, genetically predisposed tendency to explore and bond with the natural world known as biophilia, i.e love of nature (Sobel 1996, 2002; Kellert, 2005)

The way children learn is completely different from adults. To be effective, children's environmental education needs to be designed to match children's developmental needs, interests, abilities and learning styles (Bredencamp and Copple 1997). Adults usually see nature as a background for what they are doing, as a visual, aesthetic experience. Children experience nature holistically (Olds 1989) and not as a background for events (Cohen and Wingerd 1993), but rather as a stimulator and experiential component of their activities (Sebba 1991). Young children are active learners and their best learning occurs with hands-on experience, interactive play and self-discovery rather than on trying to impart knowledge to them (Piaget 1952; Fein 1981; Bergen 1988; Similansky and Shefatya 1990; Bredencamp and Copple 1997)

A teacher can play a pivotal role in fostering the love for nature in

the preschoolers. By providing early experiences with nature teachers purposefully support children's development of scientific and aesthetic thinking, so they can "appreciate beauty, express creativity and perceive patterns and develop senses" (Torquati and Barber 2005).

### **Methodology**

The study aims to find out the awareness level and approaches adopted by pre primary level teachers for developing love for natural world among preschool children. The study also aims at developing attitudes and knowledge about the natural environment with the help of series of workshops/intervention programme.

The objectives of the study were –

- (i) To find out the attitude and teaching practice related to natural environment adopted by teachers.
- (ii) To plan and implement intervention programme which includes a series of PowerPoint presentations on raising awareness and suggesting strategies to preschool teachers for including natural environment education.
- (iii) To study the difference in perception of attitude and practices of teachers before and after the intervention programme.

### **Sampling method**

Purposive Sampling was used to select the schools. The schools those were willing to participate in the intervention programme and ready to

provide researcher with the required sample size and gave permission for observation of the classrooms, were selected.

### **Sample Size**

The total sample size for the study was 17 pre-primary teachers (5 Nursery teachers, 6 Junior K.G teachers, 6 Senior K.G teachers) from one of the English medium school in Mumbai city.

### **Procedure of Data Collection**

The tools used for data collection were:

1. Questionnaire
2. Rating scale
3. Observation schedule

The questionnaire was divided into two parts:

1. General profile of the teachers
2. Knowledge about natural environment

### **Rating Scale**

A 5 point rating scale was used which consisted of 32 statements specific to attitude of preschool teachers towards natural environment.

Also a 4 point rating scale was used which consisted of 27 statements specific to the teaching practices adopted by the teachers.

### **Observation schedule**

An observation schedule was prepared to observe and document the practices of the teachers before and after every intervention programme/workshop.

The schedule was designed to record the teaching sessions.

### **Validation of the tool**

The tool was validated by two experts in the field of Early Childhood Education. The suggestions were incorporated and required changes were made in the tool.

### **Pilot study**

The tool was pilot tested with 10 preschool teachers who were purposely selected from three English medium schools in Mumbai city to understand the effectiveness of the tool before administering it to the sample of the study.

### **Procedure for Data collection**

The procedure of data collection started with the identification of the schools where the study was intended to be carried. The data collection began with a series of observations of pre primary classes followed by the administration of pre test questionnaire and then the workshop on Introducing natural environment and ways to develop love for nature was conducted, followed by observations of classroom interactions. Workshop using power point presentation on developing teaching strategies and activities for imparting nature based education was conducted; follow-up for administering the impact by observing the classes and questionnaire was used to see the change in attitude of teachers.

The duration of classroom observations done during the course

of the study was 13 hours and 50 minutes and the running record was maintained instantly.

### **Data Analysis**

The responses obtained from the rating scale were scored for each of the 32 statements. The total score was obtained and used to learn about the attitude of teachers about natural environment. For other 27 statements percentage response for each category was obtained and effort was made to know about the teaching strategies adopted by the teachers. The data was then presented in form of graphs and analyzed subsequently. The data from the pre test and post test questionnaire was tabulated and represented in the form of graphs. The data obtained through observations were also analyzed qualitatively and presented.

### **Results and Discussions**

The distribution of the sample based on their age group and teaching experience showed that majority of teachers around 34% were in the age group of 19-25 years followed by 24% in the age group of 26-32 years. Around 36 % had experience of 12 to 17 years in teaching children at the pre primary level.

### **Teachers' awareness about Nature Education**

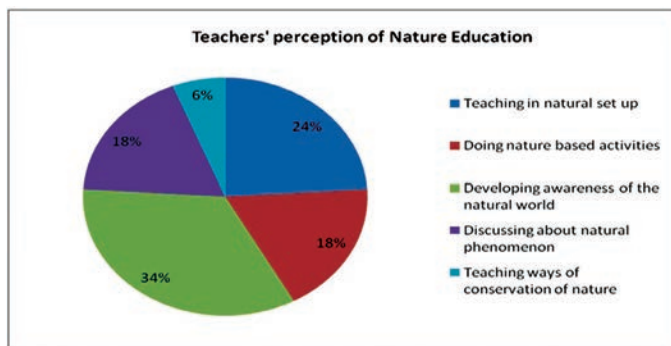
69% of the teachers had heard about Nature Education through books (15%), internet, friends, school (24%), magazines (10%) and workshops (6%).

However 31% of the total sample size had not heard or read about pre primary education focusing on natural elements. Nature Education being a newly emerged concept is not followed as part of the pre primary curriculum by teachers.

### Teachers' understanding of Nature Education

The study further proceeds to explore the understanding of the teachers about Nature Education and it is found that a highest percentage of teachers ,34% think that nature education is about developing awareness of the natural world. However only 24% assume that teaching children outdoors in the natural set up is the only way of imparting natural education.

Out of the total sample 18% feel that talking about natural phenomenon in the class and doing nature based activities is the way to nature education. While only 6% teachers assume nature education as a concept highlighting conservation of nature.



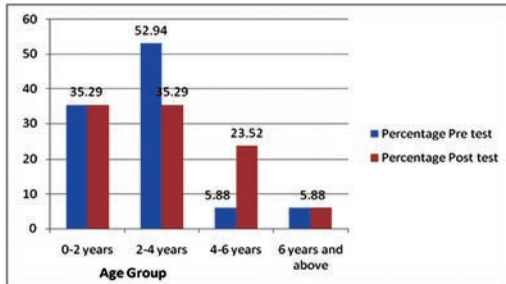
After conducting the intervention programme with the pre primary teachers the pre test and post tests the results were compared and following are the results based on the responses obtained from them in the questionnaire.

### Right age for introducing child to nature

The graph below illustrates that same percentage of teachers, 35.29% think 0-2 years of age as the right age for introducing child to nature in pre test and post test. In the age group of 2-4 years, the percentage response of teachers is very high, 52.94% compared to 35.29% in the post test. An increase of 17.64% in the post test percentage response is seen in the age group of 4-6 years compared to the pre test. However the percentage response of the teachers in the age group of 6 years and above remained constant, 5.88%.

A decrease of 17.65% is seen in the age group of 2-4 years in the post test compared to pre test. While an increase in the percentage responses (17.64%) for age group of 4-6 years in the post test in comparison to pre test. The teachers assumed that the right age for introducing children to natural environment is 4-6 years because children of this age start going to the preschool, which is seen as a platform for learning new concepts and thus a

better perception of nature, can be established in the child's mind.

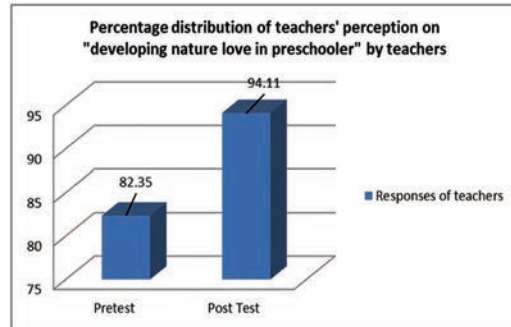


### Teachers' perception on developing care and concern for natural environment

The results shows that 82.35% of the teachers in the pretest responded positively on developing of care and concern for natural environment compared to the 94.11 % teachers in the post test. The teachers in the pretest assumed that there are individual differences and the relationship with nature cannot be developed in all the children, as it is inborn. However the posttest percentage of teachers' response showed that the teachers held the view that love for nature can be developed in the children.

The research by Bunting & Cousins 1985, Harvey 1989 supports the responses of teachers in the post test. The high percentage of teacher response in the post test can be attributed to the intervention program in form of three workshops. Also the observations done in the classroom and during outdoor play shows that as suggested in the workshops children when, over the time were exposed to natural elements in the classroom like

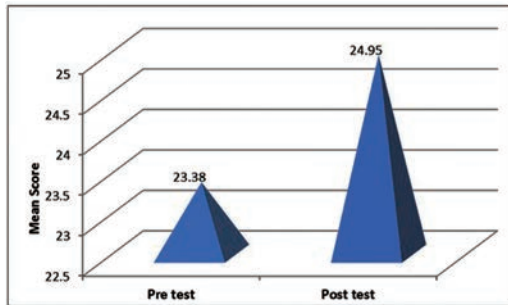
pictures, videos of plants and animals, potted plants etc., developed a sense of appreciation towards nature and thus the change in the perception of teachers was seen in the post test.



### Inclusion of Nature Education in preschool curriculum

The result obtained from the pre-test shows a lower mean score of 23.38 as compared to the post test score of 24.95. The post test results showed a positive perception and can be supported with works done by many researchers.

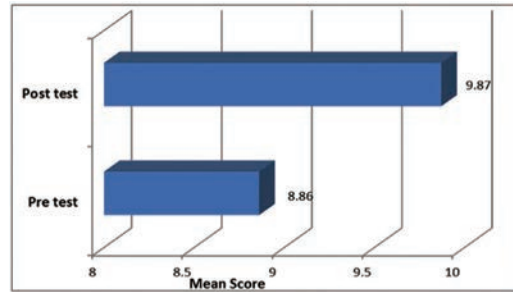
Chawla, 1994 said "More recently, there has been significant interest in promoting young children's awareness of environmental concerns and what are commonly accepted as friendly environmental practices. Consistent with that interest, environmental awareness activities are often incorporated into curricula for young children in preschool and elementary school classrooms." The teachers in the post test assumed that the nature education kept children in constant touch with the natural surroundings.



The teachers after the intervention programme started nature inclusive curriculum, for instance counting, letter construction were taught by giving hands on experience to children with usage of twigs, leaves, shells, toy animals etc., which supports the apparent increase in the post test mean score.

### Perception on role of teachers in imparting Nature Education

The data depicted shows that the pre test score (8.86) and the post test scores (9.87) of the teacher perception of role of teachers in creating sensitivity in the children regarding nature. There is an increase in the mean score of post test by 1.01 compared to the pre test which indicates that teachers perceive their role to be important for developing love for nature in the preschoolers. A child on an average spends 4-5 hours in school and a teacher through stories and through various teaching strategies can develop the sensitivity in the children and further seek help of parents to reinforce the feeling of sympathy and care towards the nature and environment.



The study looks in the classroom strategies adopted by the teachers in teaching children for imparting nature education. The following strategies were studied:

### Giving hands on experience

The comparison of scores of pre test and post test showed that the teachers' response to providing hands on experience showed a rise by 22.06%. It can be assumed that after the intervention the teachers believed that giving hands on experiences will give a better understanding of the nature concept to the children. The teachers introduced the concept of number using pea pods, as children sat in groups and counted the pea pods. The teachers used the natural elements to teach concept of numbers to the children. The classroom observations indicated that teachers gave hands on experience to the children by bringing tomato plant in the classroom and showing the children various parts of the plant and children participated in touching the leaves of the plant and the little tomato fruit part red and part green.

Chawla (1998) "Without continuous hands-on experience, it is impossible

for children to acquire a deep intuitive understanding of the natural world that is the foundation of sustainable development”.

### **Inclusion of experimentation in classroom teaching**

The inclusion of experimentation in the classroom teaching when studied through the pre and post test scores indicated that a rise of 13.72% was seen in post test scores which showed that experimentation was used as a strategy to teach children about the natural world. The classroom observation done post interventions showed that the teachers included experimentation for teaching children about the natural surroundings like teaching the concepts of floating objects through the use of objects collected during nature walk like fallen leaves, flowers, twigs, grass blades, mud ball, stones, feathers etc.

Children experience nature as a stimulator and experiential component of their activities (Sebba, 1991). The children judge nature not by aesthetics, but rather by the manner of their interaction and sensory experiences with it (Cobb 1997, Gibson, 1977; White and Stoeklin, 1998).

### **Inclusion of questioning in Nature Education**

The pre test percentage of the teachers who always are in the support of questioning children for better perception of nature is 29.4% which almost doubled to 59% in the post

test. While the majority of the teachers who often chose questioning children on nature based concepts during the pre test, decreased by 20% in the post test. During the observations after the intervention sessions it was learnt that teachers included questioning related to the natural elements, like discussion on wild animals by quizzing children on how pet animals are different from wild animals. It developed inquisitiveness and curiosity amongst the children who shared their experiences of having pets at home or visiting the zoo.

### **Summary and Conclusion**

The preschool plays an important role in shaping the views of the child as it is seen as the window for introducing the child to the outer world. So nature education is seen as facilitator of future development of the child. With the present day curriculum which focuses on all the developmental domains of the child, natural environment education can be fused with other subjects and easily imparted to the young children.

Teachers play an essential role in creating child's learning environment. It is important for the teacher to adopt the teaching strategies for imparting nature education so that the child not only develops the right knowledge and attitude but also the concern and love for the nature. The foundation of this relationship is however laid in the preschool years and nature education acts as a pivotal force in strengthening of this bond.



It may be concluded that majority of the teachers have heard of nature education but it was not used in the classroom teaching consciously. They felt that a special class needs to be allotted to teach the concept of nature sensitivity. The intervention programme which included three workshops to enhance the awareness about Nature Education among teachers and ways in which it can be included in the classroom teaching were also suggested. After the workshops, the teachers showed a more positive attitude towards practicing nature education in the class and taking the

responsibility of introducing nature to the preschoolers. This reflected their view that nature education should be a part of preschool curriculum. This was observed in the practice also, the teachers tried to include components of natural environment into the classes. However the teachers showed preference towards giving hands on experience, questioning the child about nature, participation of teachers in nature related activities and inclusion of nature based activities. I would also like to thank Dr. Padma Yadav, Associate Professor, NCERT for her guidance and editorial support.

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